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THE MONIST

A QUARTERLY MAGAZINE

DEVOTED TO THE PHILOSOPHY OF SCIENCE

VOLUME XXI.

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THE MONIST

SCHOPENHAUER'S TYPE OF IDEALISM.

MY object in this paper is to bring out Schopenhauer's view of the nature of the world of objects. Suppose that the reader and I are in a university lecture room, what, we may ask, are the desk, the seats, the floor, the walls and our own persons as visible objects to one another? According to Schopenhauer's analysis they are really our sensations—which, however, we combine and separate, order and arrange, and so make into the distinct objects before us. The desk means a certain color, a certain hardness and smoothness—its outline or form being the spatial line or lines where these sensations cease. The total ordered group of sensations we call the desk. It is the same, *mutatis mutandis,* with all the objects in the room—even with our own persons: one hardness, color or combination of colors, form and outline is a seat, another the floor, another you, another I and so on.

How then do these objects exist? If they are fundamentally our sensations, are they really independent of us, as in our ordinary mood we think? Are they not rather our experience—one experience (or set of experiences) being localized here, another there and so on?

Suppose, however, we were not on hand, and the experience did not exist, what then? Would the objects be non-existent? Of course, *ex hypothesi,* our persons would not be here, but how about the desk, the seats, floor and

walls? Would they be non-existent? This, perhaps in unduly simple form, is the question of idealism or realism. If one believes that the desk with its color, hardness and outline would exist just as truly with nobody at hand to experience it as it does with ourselves present, he is a realist. If, on the other hand, he holds that it would not exist under such circumstances, that it is real only in the experience of you or me or somebody like us, he is an idealist. Even if the realist concedes that some of the properties of the desk (its color, for instance, or its hardness) are only our experience, while still maintaining that something there, however indefinable, exists independently, he is none the less a realist (though what may be called a critical one). And the idealist who, while asserting the experiential nature of all objects, admits that something must be there which gives rise to or occasions our experience (itself being independent of experience), is no longer an absolute, but a critical idealist. In fact, the critical realist and critical idealist may not radically disagree, their opposed names being simply descriptive of the contrasted points of view from which they set out. But an absolute realist and an absolute idealist are antithetical to each other. Yes, a critical realist and an absolute idealist are radically opposed—and, for that matter, a critical idealist and an absolute idealist, since to the absolute idealist anything at all outside experience, even if it be an x or a question mark, anything non-mental whatsoever, is unreal and absurd.

Now Schopenhauer is an idealist to start with (whether an absolute one, we shall see later); he belongs in general in the idealistic camp. Objects exist to his mind in relation to a subject, not outside. Sensation itself, he says, is a *poor* thing; and something more than sensibility, namely, the intellect or understanding, is needed to build up the world and construct all the definite objects in time and

space that we see. Yet there are no other elements to build with, no other construction-material, than what sensation gives us—and sensation apart from a sentient subject, something that has sensation, is a thing in the air, impossible and unmeaning. Yes, that process of grouping and locating in a definite space and time which turns the confused mass of sensations into recognizable objects—this does not make them any more things really independent of us. The mind groups them and they are grouped to the mind; the mind locates them and they are located to the mind. Even when they are connected according to the law of causality, it is the mind that connects them and they are connected to the mind. In other words, the whole being of objects, their sensational substance, and the form we give them, is relative to ourselves. This, of course, is not saying that the desk, the seats, the walls here *do not exist outside our bodies.* Our bodies are objects like any other objects; they are made up of sensations and the form which the mind gives them, just as the table or the seats are; and just as the desk is separate from the seats, so is my body separate from yours. The desk is here when my body is out of doors, and when my body is gone absolutely, that of my readers, let me hope, will indefinitely continue.

The idealistic position involves no violence to any of the distinctions and assertions that common sense makes. Idealism only says that these objects do not exist outside our minds, that our own bodies exist only in our own or somebody's mind—in a word, that they are objects of experience, not realities outside experience, and that if there were no experiencing beings or selves, what they would be becomes a mystery, if indeed it has any sense to speak of them at all. What is a pain if there is nobody to feel it, what is a taste if there is nobody to taste it? Now just that is the whole perceptible world, including our own persons, if there is no subject that feels, perceives, experiences them.

Such is the idealistic view, and of it Schopenhauer is one of the most pronounced representatives. The whole matter is so clear to him that he hardly argues about it. "Forsaken of all the gods," he says in the Dissertation,[1] is one who imagines that the perceptible world standing there outside us is there without our contributing anything to it; and that then by means of bare sensation it finds its way into our heads, where it exists over again just as it does outside! A world outside consciousness—and then when consciousness arrives, a second world, entirely separate from it and yet like it to a hair![2] It seems absurd to Schopenhauer.

I say he hardly argues about his idealism. It seems to him simply a matter of careful reflection and clear thinking (*Selbstbesinnung*), He follows Kant's searching analysis.[3] He even goes further than Kant—or at least he holds to the Kant of the first edition of the Critique of Pure Reason, and chides him for making concessions to prejudice and so-called "common sense" in the second, saying that no one really understands Kant who knows only the second edition.[4] *Kein Objekt ohne Subjekt* ("No object without a subject"), he declares. "The world is my idea" is another way of putting it. For to be an object in relation to a subject, to be an object of a subject, and to be an idea, are in essence the same thing, idea (*Vorstellung*) being used here simply to signify what is ideal or subjective in its nature as contrasted with something supposed to exist in itself. All our ideas, says Schopenhauer, are objects of the subject and all objects of the subject are really our ideas.[5] Indeed, out of relation to a subject, Schopenhauer says, an object

[1] *Werke* (Frauenstädt ed.) Vol. I, "Ueber die vierfache Wurzel des Satzes vom zureichenden Grunde," p. 80.

[2] *Werke*, III, 11.

[3] *Werke*, I, "Ueber die vierfache Wurzel etc.," 32.

[4] *Werke*, II, 515-516.

[5] *Werke*, I, *op. cit.*, 27.

is *schlechthin Nichts,* "simply nothing"; when one leaves this relation out of account, nothing is left; the existence of the object in itself is an *Unding* (unmeaning) and vanishes.[6] So he said in 1813; and thirty years later he declared with equal positiveness, "Never can there be an absolute and purely objective existence, for always and in the nature of the case an object has its existence in the consciousness of a subject and is really its idea.[7]

So far does Schopenhauer go in a feeling of this sort, that the world of objects becomes almost dreamlike to him. It is real to us, of course, as our dreams are while they last, but he speaks at times as if it were hardly more real. I say "almost" and "hardly" and speak with qualification at this point, for we shall soon see that Schopenhauer did not hold this dream-view absolutely. Here are instances of his two sets (divergent sets) of statement:

1. In one passage, after remarking that Kant's argument proves that things cannot exist independently as they appear to us, he says the similarity of such a world to a dream is manifest.[8]

Again, things in space and time have only "an apparent dreamlike existence."[9] Still again there is, he says, a close relationship between life and dreams, and no definite line can be drawn between them.[10] In this connection he finds the Indian sacred books suggestive, and frequently uses the Hindu expression, "veil of Maja" (illusion) for the world of perception, indicating thereby his feeling of its more or less illusory nature. He even says dreams and the objective world are leaves of one and the same book;[11] they are

[6] Cf. the passage from the first edition of the Dissertation, "Ueber die vierfache Wurzel etc." (Rudolstadt, 1813), p. 33, cited by J. Volkelt, *Arthur Schopenhauer* (3d ed., 1907), pp. 77-78.

[7] *Werke,* III, 6.

[8] *Werke,* I, *op. cit.,* 21.

[9] *Werke,* II, 214.

[10] *Werke,* II, 20-21. Cf. III, 4.

[11] *Werke,* II, 21.

poured out of one form (*aus einer Form gegossen*[12]); the function of the brain that calls forth the world of dreams has equal part in putting before us the world of actual objects.[13] He confesses that sometimes, particularly in listening to music, his fancy plays with the thought that the lives of all men are only dreams of an eternal Spirit, bad dreams and good ones, and that death is an awakening—not our awakening, of course, but His.

2. And now the contrasted passages. In one, he remarks in general on our power of distinguishing the real connections of objects from fancied connections, and real objects from phantasms, and makes the significant statement that in sleep we can not do this, inasmuch as the brain is then isolated from the peripheral nervous system (the outer senses, that is) and does not receive impressions from without; hence dreams, where phantasms are taken for real objects because there are no real objects to compare them with—and only when we awake, Schopenhauer says, do we observe our error.[14] In another passage Schopenhauer even argues that if the world were only an unsubstantial dream or a ghostlike castle in the air, it would not be worthy of our serious attention.[15] Indeed, Schopenhauer's whole view of the world as ultimately will (which I can only refer to in this article) rests on the idea that what we call objects are not merely what we see, not merely these complexes of sensation that we can handle, arrange and causally connect, but that they have an inner being of a totally different character. No one imagines that dream trees or desks or persons have any such substantial being lying back of them—not even Schopenhauer. We are obliged to conclude then that his comparison of life to

[12] *Werke*, III, 4.
[13] Compare this and other quotations in Volkelt, *op. cit.*, 84.
[14] *Werke*, I, *op. cit.*, 89.
[15] *Werke*, II, 118.

dreams must be taken with circumspection. The language he uses is approximate, literary, more or less emotional, rather than scientific. In a certain respect objects are like dreams—that is all he really means to say.

For all this Schopenhauer belongs primarily in the idealistic camp. Whatever may be the truth about objects ultimately, what we are accustomed to call objects, this vivid world we see and touch and hear and taste and smell, the objects next at hand and those in farthest space, those that last for a day and those that last for centuries, objects without us and our own bodies including our brains and the finest elements of which they are composed—all these are only our experience (or somebody's experience, or if not at any given moment experience then possible experience) and apart from experience absolutely, they lose all shadow of meaning—this is his view. I have said he does not argue about it, i. e., attempt to prove it. Yet certain considerations in its favor he does not fail to advance. For instance, it was customary among philosophers in his day to regard space and time as *a priori* forms of the mind rather than as self-existent realities, and Schopenhauer does likewise. All objects that appear in space and time (and practically all the objects we have been speaking of do) are hence so far subjective. Further, causality is to Schopenhauer *a priori* and subjective. So far then as objects are causally connected, they become still more subjective. Schopenhauer repeatedly argues that the world as we picture it in space and time and ordered according to the law of causality, cannot be independently real, for space and time and causality are only forms of our minds.

Another consideration he urges is that in our experience of the world we come on the inexplicable and inconceivable. For if our knowledge took hold of things as they exist in themselves, we should not encounter these mysteries—and the fact that we do proves that our knowledge

is of appearances not realities.[16] Still another is that time of itself produces no physical effect—it is the mere form in which causes and effects succeed one another. The fact that it produces nothing, alters nothing, shows that it is a mere idea of the mind.[17] Schopenhauer even uses the phenomena of clairvoyance, which in general he credited, as showing the non-reality of time and space. If the future were really separate from the present, and the distant from the here, the gulf could not be leaped between them.[18] In these and other ways, convincing and unconvincing, Schopenhauer sought to give plausibility to his idealistic view.

But because idealist, is he absolute idealist? The absolute idealist says not only that the things we know are our experience, but that there are no things outside of experience (i. e., somebody's, human or non-human), that existence and experience (actual or possible) are equivalent, or at least strictly correlative, terms.

Schopenhauer uses language almost as sweeping; and yet puzzled as we may be, and as his commentators have been, I feel no hesitation in answering the question in summary fashion: Schopenhauer was not an absolute idealist. He does, indeed, object to Kant's way of getting at the independent realities—i. e., to his using the category of causality and conceiving them as the causes of our sensations[19]—but that there are independent realities he holds as firmly as Kant did. Schopenhauer is the antithesis of Hegel, and what is called post-Kantian philosophy generally—the antithesis of philosophers like Bradley and Royce to-day. They hold that things existing independently of a subject (some kind of a subject) are an absurdity; he, I might almost say, makes the supposition of independent, self-existing things the basis of his philosophy.

[16] *Werke*, III, 217-218.
[17] *Werke*, III, 341; VI, 41.
[18] *Werke*, VI, 45; V, 280 f., 282 f., 321.
[19] *Werke*, I, *op. cit.*, 81, 83; cf. II, 200, 499, and particularly 516-517.

Let me at once refer to passages. In one he says that objects in space and time exist only to a subject, because space and time are the forms of a subject; but these objects may have an existence in and for themselves, and for this they may require no subject.[20] In another passage he goes further and says that a perceived object must have some manner of existence in itself, for otherwise it would be merely another's idea and we should have an absolute idealism which in the end would be theoretic egoism and involve the falling away of all reality and the reduction of the world to a mere subjective phantasm.[21] The customary name for theoretic egoism nowadays is "solipsism"—meaning, to put it popularly, that I exist (each one saying this for himself) and the world is my idea, and there is nothing beside; it might be called the theory of "I alone." Schopenhauer's point is that if things have no existence independent of us, if the world is merely our idea, then we do not get out of ourselves at all and we are unable to posit even the existence of other persons aside from their bodies.

No one has argued this with greater force than Edmund Montgomery, a writer well known to the readers of *The Monist*.[22] Only on premises antagonistic to absolute idealism, only by supposing that things may exist whether we experience or think them or not, can we reach other minds than our own. Your mind does not exist because I think or perceive it, your feeling does not exist because I feel it—they exist in themselves, and would whether I or any one else had experience of them or not. If then I restrict myself to what I can experience, if this is all I call existence, and anything independent of my experience is an unreality, then you are an unreality to me in your inner

[20] *Werke*, III, 6.

[21] *Werke*, III, 216.

[22] See his *Philosophical Problems in the Light of Vital Organization* (G. P. Putnam's Sons, New York and London, 1907), chapters V and VI of Part I, "The Epistemological Dilemma" and "The Epistemological Standpoint."

being, and we are all (supposing there is an "all") unrealities to one another. In other words, the refusal to credit the possibility of independent reality (i. e., absolute idealism) involves logically solipsism. This is Schopenhauer's contention. And he revolts against such a conclusion as little less than monstrous. Any one who soberly holds it he thinks would be a fit subject for a mad-house, and should be there not so much for argument as for a cure.[23]

Still another passage. Granting, he says in substance, that the world as we see and experience it is our idea, we yet wish to know the significance of the idea. We ask if it is nothing more than idea (in which case it would be no better than an unsubstantial dream or a ghostly phantom and be unworthy of our attention), or, if it is not something else, something in addition, and if so, what.[24] In the same vein is the remark that if phenomena are not to be empty phantoms, but to have a meaning, then they must point to something, be the expression of something that is not, as they are, merely an idea for a subject, and so dependent on a subject, but an independent reality.[25] Moreover, Schopenhauer felt, as already indicated, that there is something strange and inexplicable in the phenomena of the world. The specific nature and manner of working of each particular thing (or at least class of things) is mysterious; we can only discover the conditions under which a thing acts in the peculiar manner it does—the time, the place, the antecedent circumstances —but the ultimate why of the action is undiscoverable.[26] It is so with human beings. The motives operating on a man do not explain his act till we know what sort of a man he is; and this, his original disposition or character,

[23] *Werke*, II, 124. Cf. Volkelt's paragraph on the subject, *op. cit.*, 158.

[24] *Werke*, II, 118.

[25] *Werke*, II, 142.

[26] Cf. my article on "Schopenhauer's Contact with Pragmatism" in the *Philosophical Review*, March 1910, pp. 149-150.

is a mere datum or brute fact. Things *are* so and so, and no reasons, ultimately, can be given for them. This unaccountability and unfathomability of the world, its purely empirical character, was to Schopenhauer proof that in it we have something more than merely mental phenomena which as products of the subject would sooner or later be intelligible to the subject just as are those other unquestioned products, the forms of space and time.[27]

Once he makes a formal set statement, and I will not paraphrase but literally translate it: "A thing-in-itself signifies something present that is independent of our perception and hence that really exists. To Democritus this was formed matter; in principle it was the same to Locke; to Kant it was x; to me will."[28] He adds, every being (*Wesen*) in nature is both phenomenon and a thing-in-itself[29]—i. e., exists in relation to a subject and also independently. Anything more precise and definite could hardly be desired. In the last analysis Schopenhauer is a realist of the most positive type.

How then can we reconcile the opposite poles of Schopenhauer's thought? "No object without a subject," he at first affirms; and now, "There are things independent of a subject." Is it a contradiction? So some critics assert, for instance Ueberweg,[30]—even some not unfriendly ones, including Volkelt who has written perhaps the best book on Schopenhauer.[31] Nor can we ease our minds by saying that consistency is not necessary. Emerson called the demand for consistency the hobgoblin of little minds; but while

[27] *Werke*, III, 217-218; cf. II, 116 f., 129, 144 ff., 161 ff.; IV, "Die beiden Grundprobleme etc.," 46 f. See Volkelt's admirable statement, *op. cit.*, 158-160.

[28] *Werke*, VI, 96.

[29] *Werke*, VI, 97.

[30] *Geschichte der Philosophie* (4th ed.), III, 285 and 290 *n.* Ueberweg says that Schopenhauer by his sweeping assertion, *Kein Objekt ohne Subjekt*, denies the *Transcendentales Objekt* or *Ding an sich*, which Kant allowed.

[31] *Op. cit.*, 155-156. Cf. Hartmann, *Gesammelte Studien und Aufsätze* (Berlin, 1876), 637 f., 640 f.; Thilo, *Ueber Schopenhauers ethischen Atheismus*, 15 ff.; Möbius, *Ueber Schopenhauer*, 57-59.

this may possibly do for the literary man or the prophet, it will not do for the philosopher. If he really contradicts himself, it is fatal to him, and Schopenhauer recognizes this. Though he once remarked that pointing out contradictions is the commonest and most notorious way of refuting an author,[32] and though in contrast with Kant, so scrupulous or even pedantic in his qualifications and refinements, he philosophized as Volkelt has said in a royally careless and straight up and down manner,[33] he would have been the first to admit that if one said a thing and then denied it in the same sense, it was the end of him as a thinker. In interpreting Schopenhauer we have to have a little largeness of mind and sympathy, and not be tied down by words.

The key to the understanding of his apparently inconsistent view on this subject lies, I am persuaded, in a double use of the term "objects." Sometimes he uses this term loosely and popularly, as we all do; at other times he uses it strictly and scientifically.[34] In one sense anything is an object that we can talk about at all—a desk, a tree, a natural force, an ego, an angel, a God, the inhabitants of Mars, things we know and things we do not know; in short all sorts of things mixed up together. In another sense an object is something that we can put clearly and definitely before the mind—of which we can say, There it is, look at it; see its form and outline, notice its characteristics, a clear, distinct, recognizable, almost sensible thing. Now many objects in the broad vague sense are not objects in the special and more precise sense. Try to think of a natural force, for instance—have you any clear picture before you? Try to think of an ego or subject—can you

[32] Grisebach, *Schopenhauers Briefe*, 135.

[33] Volkelt, *op. cit.*, 64.

[34] Cf. language about the "Begriff Objekt im eigentlichsten Sinn," "der Leib selbst nicht eigentlich als Objekt," "jede Erkenntniss eines eigentlichen Objekts," (*Werke*, II, 23). Schopenhauer recognizes the obligation of philosophy "in allem was sie sagt, *sensu stricto et proprio* wahr zu sein"; it goes without saying however that he often uses words loosely.

distinctly conceive of it? Try to think of the inhabitants of Mars—have you any real idea of them at all? In other words, many things we talk about we find are really quite hazy to us, and this comes pretty near to saying that they are not objects at all; they are surmises, vague ideas, and yet with more or less assurance (according to the particular case) we may say they have something of reality attached to them. They are not quite nothing, though we cannot picture them or make a recognizable object out of them.

Now on analysis we find that the things that do become real objects to us are chiefly (I do not say, exclusively) of one class. They are the things made up out of our sensations—the desks, trees, rivers and lakes, the moon and stars, our bodies and so on. We can picture them most definitely. We may believe in the existence of other things or even be most sure about them—as, for example, that there is more to us than our bodies, or that another person is now experiencing a pleasure, or that an animal is running away in fear; and yet when we try to put clearly before us that other more which we are, or make a distinct object of that pleasure or fear, we find that they more or less elude us and we say perhaps we cannot make definite objects of them though we know they are real. That is, the only things that do become distinct objects to us are the direct objects of our experience. We see and feel color, hardness, weight, i. e., the material or physical world stretching out before us and above us, but we do not see another person's thought or feel another person's feeling; we do not even see our own thought or have a sensible experience of our own inner being and so we cannot even picture ourselves, not to say others, as we can outer things. It turns out thus that the objects that are distinct, and genuinely objects are physical or sensible objects. It is our height of praise, is it not, to say that something is as plain

as day, or as evident as the nose on your face. And yet these physical or sensible objects, being made up of sensations as they are, are strictly inconceivable apart from a sentient subject, being indeed simply the experiences of that subject.

Now if we bear all this in mind, I think we have the key to Schopenhauer's real view. When he says, "No object without a subject," he means no object that is really an object; i. e., that is distinct, that has any clear marks by which it may be known and recognized; for all such objects, according to the matter-of-fact constitution of the human mind, are sensible objects, experiences by the mind of its own sensations, worked over, classified and connected according to its own categories. But when on the other hand he speaks of objects existing independently of a subject, as he is most certain that there are, he uses the term "objects" in the other loose, vague, popular sense in which anything is an object that may be spoken of at all. When he wants to be precise, he even says distinctly that these objects should not be called "objects" and he chides Kant for speaking of things-in-themselves as objects.[35] "Objects" in this precise sense are only objects of knowledge, things that stand out clearly before us, and the only or at least chief things that do this are matters of sensible experience, things that have no meaning or existence apart from an experiencing subject; but things that stand dimly in the background, things we cannot make out, things that cannot be classified and named, or, if so, are little more than names—these are not objects and can only be called such owing to our loose and inaccurate habits of speech.

It is true then that the whole world of our positive definite knowledge, made up, or built up out of our sensible experiences as it is, has no existence apart from ourselves;

[35] *Werke*, II, 206; cf. II, 131, "Dieses Ding an sich..., welches als solches mehr Objekt ist, etc." Also II, 143.

but this is not inconsistent with the admission that something lying back of this world and hinted at by it, may exist quite independently of ourselves—only it is not an object or objects in any intelligible sense of that word. Hence, "No object without a subject" is true. "There may be things existing independently of a subject" is also true. The desk as such, the tree as such, the moon and stars as such, i. e., these groups of sensible qualities, light, color, and so on, that we immediately experience, would not exist were we, or some beings like us, not here; but something lying back of these qualities, something they point to, something they signalize,[36] may exist and exist just as truly when we are not here as when we are. This something, or rather these somethings, may be vague and indefinable; they may be no objects, and yet they may be real; they may even be more real than the sensible qualities in which they express themselves to us. For these sensible qualities come and go; they are while we perceive them, and when we do not perceive them they are not, while the things themselves may have a perduring existence. And it may be added that a dream differs from a reality in this, that a dream is a set of sensations that "signalize" nothing beyond them, while a reality is a set of sensations that point to something, are an expression or revelation of something. Both are subjective in one sense of the term, for neither dream objects nor real objects can exist without a subject to experience them (hence Schopenhauer's comparison); but the dream object has nothing behind it and the real object has. Or more briefly, the world, our actual world, is a dream and has no self-existence; but it is a dream that means something, and *that* is not a dream.

An idealist then as to all this world of our knowledge; but a realist in the sense of holding to a sphere of existence beyond the bounds of positive knowledge—that is what

[36] This is a term of Edmund Montgomery's.

Schopenhauer seems to me to be. Knowledge, he virtually says with a great English poet,

"Knowledge is of things we see."

for the *a priori* forms of knowledge which he recognizes are formal merely, and give us no concrete content. Knowledge is built up out of sensation—there is no other. All our conceptions and judgments and reasonings have no other ultimate material on which to work or out of which to build. And yet there may be things other than those we see, and the very seen and seeable things may mean something, may indicate, point to something, and this something be more real than anything we know. What that something may be conjectured to be, is a question that lies beyond the limits of the present article.

Before closing, however, I may be allowed to say a word as to an unconsidered factor, a "sleeping partner" in our problem. We have been considering objects, but what about the subject that knows objects, i. e., what about our veritable selves? To some it may seem as if we know ourselves, even if we do not know anything else. Have we not a little world of our own, or at least each his little world, made up of our thoughts, our feelings, our desires, our aspirations, our inner efforts and decisions, that in contrast to the world without, we know perfectly? Schopenhauer, strange to say, doubts it. He is more or less dubious about a so-called special science of psychology.[37] He thinks a clear vision of our inner life is hard to get. The mind is of such a nature that it looks without more easily than within. It is like a telescope, he says. Look out through it and all is light and clear; try to look down within it, and all is dark. Nothing *a priori* illuminates that night; our watch-towers throw all their rays outwards.[38]

Let us restrict our consideration here to the knowing

[37] Cf., e. g., VI, 20; also Frauenstädt's *Memorabilien*, 562, quoted in R. Lehmann's *Schopenhauer*, 171 *n*.

[38] *Werke*, IV, "Die beiden Grundprobleme, etc." 22.

side of our nature. We all are that—subjects that know. But for this there would be no knowledge, there would be no object. Schopenhauer affirms this. He says subject and object are not the outcome of knowledge, but the condition of all knowledge. The relation between them is a unique relation; it is not a relation of cause and effect, not one of reason and conclusion, not one covered by any of the forms of the principle of sufficient reason.[39] It is a relation, rather, that is the condition of the possibility of the principle of sufficient reason. This principle applies to objects and their relation to one another. The mind knows an object and seeks to explain it, but it does not seek to explain that which asks for an explanation nor the relation which it sustains to the object to be explained. In other words there is no explanation of the subject proper; it lies out of the region in which the principle of explanation applies. We simply *are* subjects—that is all we can say. We cannot go back of this primal datum. But even if we cannot explain, can we not know ourselves as subjects, it may be asked. Schopenhauer is dubious here too. To know ourselves as subjects, he virtually says, is to make an object of the subject, to put it there before us, to consider it, to observe it, to see what it is like. Schopenhauer says that this is just what we cannot do. We cannot turn back on ourselves and make an object of ourselves and look at it. That thing we make an object is, *ipso facto,* not the subject itself, but a mere idea, a mere imperfect hazy, logical product. The real subject is not there, but the very thing that is trying to make itself an object—and can't. If it could and became an object, it would be no longer subject. Indeed, if it became an object, who or what would see or perceive the object? It is that which sees, perceives, and thinks that is the subject, and it is forever a subject. Even if you could imagine yourself seeing it or thinking it, it

[39] *Werke,* II, 16.

would really be not what you saw or thought, but you yourself that were seeing or thinking. In brief, the subject that knows cannot be the object of knowledge. This is what Schopenhauer affirms in almost so many words.[40]

Let me close with an incident from Schopenhauer's early Dresden days, when he was in travail with the ideas of his great work, *The World as Will and Idea.* His friend Frauenstädt narrates it, and says that at the time there was something so unusual in Schopenhauer's manner and bearing that one might almost have thought him out of his head. Once he was going around in the city hot-house and became quite lost in the contemplation of the physiognomy of the plants. Whence came, he was asking himself, their so different coloring and shapes? What would this growth say to him in its form, so individual and peculiar? What is the inner subjective being, the central will, that here in these leaves and these blossoms is coming to expression? He perhaps spoke aloud to himself, and in this way as also by his gesticulations attracted the attention of the keeper of the hot-house. The keeper was curious as to who this extraordinary man might be, and asked him the question as he was going away. Schopenhauer replied, "Yes, now, if you could tell me who I am, I should owe you many thanks." And the keeper looked at him, as if he had a crazy man before him. It was a bit of humor, Schopenhauer remarked to Frauenstädt.[41]

"If you could tell me who I am!" Doubtless Schopenhauer had in mind the general puzzle of the human personality, but perhaps my readers will grant that what this subject is that is never object, is a part of the puzzle.

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[40] Cf. *Werke,* I, "Ueber die vierfache Wurzel etc.," 141; II, 5-6; III, 18.

[41] This incident as narrated by Frauenstädt is given in Möbius, *Schopenhauer,* pp. 55-56.

PROFESSOR MACH AND HIS WORK.

AMONG modern physicists Prof. Ernst Mach of Vienna holds a prominent place in the esteem of naturalists and the general public. His success appears to be mainly due to the simplicity and accuracy with which he presents his thoughts, and more than any other scientist he has insisted upon the principle of distinguishing between facts and theories. While he would allow theories to pass as hypotheses, which means as assumptions that help us to think facts in an economical way, he would insist that the facts of existence are the only realities. But the difficulties which beset such a positivism as he represents consist in the question, "What are facts?" Professor Mach, in unison with the majority of philosophers and scientists, accepts our sensations, so far as I can see, as the data from which our investigations start. He analyses these sensations and calls them the elements of the world.

These elements of the world are to him the ultimate facts of reality; and right here Professor Mach finds himself in contrast with other physicists, among whom we will mention Prof. M. Planck who pursues the opposite way and in his "Analysis of the Data of Experience," adopting the current physical and chemical interpretation of matter as consisting of atoms, looks upon these atoms as the ultimate indivisible items of existence and considers them the only real things.

We will here characterize the leading ideas of Profes-

sor Mach and at the same time acquaint the reader with the development of his personality, which shall be done so far as possible in his own words.

We will say at once that Professor Mach's significance in science as well as in his private life is based on the straightforwardness of his way of thinking and living. There is no pretense about him. He does not want to appear in a wrong light. He does not decorate himself with the plumes of others and if he exaggerates or goes too far in any way it is only when describing his own shortcomings. His statements in his scientific expositions are always plain and this plainness shows in his private life as a modesty which is the distinctive mark of a truly great man. It is extremely characteristic of him that the notes which he kindly furnished to assist us in understanding his development are almost exclusively a description of his shortcomings in school, and the disappointments which his teachers showed while giving him his elementary instruction.

We must here bear in mind that most original thinkers have been poor scholars. At school we are expected to memorize, and scholars are passed or reprimanded according to the faithfulness with which they are able to repeat, if possible literally, what they have been taught. Thus it is quite natural that those who attempt to think for themselves will not be regarded as shining lights in school, and yet when the demands of life approach us the question is not how well we can repeat what others have said, but how accurately we can think and with what energy we can attend to our duties. From his childhood Mach was not intended to excel by memorizing, but even while his teachers reprimanded him for his dullness of mind, he was thinking for himself, and when he became acquainted with the actual problems of science he was able, as was none of his predecessors, to understand the development of scien-

tific thought and render the methods of scientific progress intelligible. Most of Mach's works, especially his *Science of Mechanics,* are now known as models of clearness and exactness, and the teachers of his early childhood would probably be surprised to learn what a genius was hidden in this slow and dull boy to whom they had given instruction in the elements of human knowledge.

The first important work upon which Mach's fame rests, is his *History and Root of the Principle of the Conservation of Energy*, published in 1872, a considerable time before naturalists had agreed upon the foundation and explanation of the theory of the conservation of matter and energy. The term "energy" was not yet fully accepted in those days, and the title of Mach's book uses in its place the German word *Arbeit,* i. e., "work." His greatest book, *The Science of Mechanics,* appeared in 1883, and we need scarcely fear contradiction if we say that it will remain forever the classical exposition of this important subject. In 1886 Mach wrote a short work, which however is extremely interesting and throws much light on his peculiar way of thinking, under the title *Analysis of Sensations,* and this was followed in 1896 by another compendious work entitled, *The Principles of the Theory of Heat.*

Having more and more concentrated his attention on the problem of cognition he finally published his ideas in their most mature form in 1905, under the title *Cognition and Error.* In the meantime Professor Mach had written a series of articles for various periodicals, among them *The Monist* and *The Open Court,* and the Open Court Publishing Company published a collection of them under the title *Popular Scientific Lectures.* This work was soon afterwards republished in its original German form as *Populärwissenschaftliche Vorlesungen.*

We here publish a review of Professor Mach's life based on notes which he himself furnished and one cannot

help admiring the frankness of this great and famous scientist, as he describes the difficulties which he encountered in passing through school.

* * *

Ernst Mach was born February 18, 1838, at Turas in Moravia, and was the son of Johann Mach, at that time tutor in the family of Baron Breton, and his wife Josephine, née Lanhaus. In 1840 his father came into possession of a rather large farm in Unter-Siebenbrunn in the Marchfeld. To this circumstance Ernst Mach owes the fact that he was able to grow up in the country and to enjoy a happy childhood. His earliest instruction was received from his father, and in the year 1847-48 he entered the lowest class in the school of the Benedictines at Seitenstetten in Lower Austria. The good fathers found the boy very lacking in ability but allowed him to pass, advising his father, however, to have him learn some trade or business; and they were right. Neither sentences like *Initium sapientiae est timor domini,* nor declensions and conjugations had any inspiration for Mach, and he would never have become a good memorizer. The only stimulating recitation hour which he remembers was the lesson in geography. No one knew, however, that his imagination was constantly engaged with windmills and other machines as well as with experiments in atmospheric pressure which his father had shown him with the most simple apparatus, a flower-pot and tumbler in a tub of water. Had it been known it would only have injured the dreamy young fellow.

Mach's father was greatly disappointed by his son's poor success and kept him at home in order to take him again under his own instruction in the studies of the gymnasium, comprising Latin, Greek, history and the elements of algebra and geometry. Still the pupil showed but little talent and less interest for the languages, and when some

mmatical rule would not stick he often heard the im-

patient exclamation, "Norse brains!" or "Head of a Greenlander!" As soon, however, as the reading of classical literature began, the study of the ancient languages took on a more friendly aspect, and the student attained considerable fluency in translation and a ready understanding of the texts. It was an advantage too that in these home studies he could read a great deal more than is commonly studied in public schools. In mathematics and physics Mach could soon be left to himself because of the great interest he took in these branches.

Since the morning hours sufficed for study Mach was able to devote the afternoons to various kinds of work in the fields, and from this experience he gained a lasting respect for that part of mankind who live by manual labor.

We must not neglect to mention that the time of Mach's youth bore a strong reactionary and clerical complexion after the overthrow of the revolution in 1848. For this reason the boy, who had grown up in a liberal family, besought his father to let him learn the trade of cabinet making so that he might eventually emigrate to America. His wish was granted. For more than two years two full days in the week were devoted to this employment under the guidance of a skilled mechanic in a neighboring town. This period too Mach holds in grateful remembrance, and many an experience gained while thus working in wood proved very useful to him in his later vocation. He remembers with pleasure the agreeable feeling with which, when physically wearied in the evening, he would sit on the fragrant woodpile and at his leisure construct pictures of future machines, air-ships and the like. From this experience the thinker learned how much he owed to the laborer.

Mach's father was especially conversant with Latin literature and history and was at the same time an excellent story teller. Although he had never had a profoundly

scientific education he could be very stimulating to the children, because of his love for nature which he was fond of observing, and especially because of the anecdotes he could tell about Archimedes and other ancient investigators, after Vitruvius, Plutarch, and others. The flora and especially the splendid fauna of insects did their share to induce the boys to make collections and to take pleasure in the different forms and their comparison. Guests seldom came to Siebenbrunn, but on summer Sunday afternoons almost all the larger children of the village, both boys and girls, would come to gather around Mach's father in the garden and learn the nurture of fruit-trees, grafting etc., which instruction was delightfully sweetened by the enjoyment of the fruit itself. Otherwise the young Mach's intercourse was limited to his father, mother, and two younger sisters, so that there could be no question of social pampering nor did he acquire the art of being bored.

At the age of fifteen, after passing the entrance examination, Mach entered the sixth class of the public Piarist gymnasium in Kremsier, Moravia. He did not get along very well at the start because he lacked the cleverness and cunning prevalent in schools, and these had first to be acquired. In general the teachers were not especially scholarly, but certain ones of them Mach remembers with pleasure, esteem and particular gratitude.

An especially amiable man was F. X. Wessely, the instructor in natural history, who not only was filled with zeal for his specialty, but knew how to communicate this enthusiasm to his pupils as well. He taught them the theory of Lamarck, and also the Kant-Laplace cosmogony, without losing any words over the incompatibility of these teachings with the Bible. Mach remained in connection with him until he died at an advanced age only a few years ago.

The teacher of physics was a remarkable didactician,

who knew how to rouse the interest for his subject to the highest pitch, but unfortunately was too impatient to be a good instructor. To the teacher of Greek, F. M., an enthusiast for Greek culture, who saw, or at least wished to show, only its bright side and who was a worshiper of Greek grammar, Mach remained permanently indebted for the forbearance which made this subject endurable to him. Mach who had no interest for dynasties and histories of war and at the same time possessed a very bad memory, did not get along well with his teacher of history. But while his teacher gave tests from the dry chronology of Pütz, he would also read by the hour from large volumes of history and original sources, so that the students did not receive the impression that the spiritual and secular rulers of the world had performed only such duties as were ostensibly assigned to them by God and had had only the welfare of their subjects at heart. In the higher classes the pupils had occasion to learn also of such occurrences as are brought to the knowledge of the public in Max Kemmerich's *Kulturkuriosa* which served to throw light on the whole course of history.

Although as a whole the system was reactionary-clerical, yet there were men enough there in whom the traces of the liberal influence of Emperor Joseph II had not passed by without leaving an effect, and who interpreted in this spirit their calling as teachers. The only unpleasant details were the rituals, the everlasting religious exercises, which accomplished a result exactly opposite to that desired. When Mach protested to his father with regard to these things and complained about them, he only received the answer, "If you had grown up under the Chutchkas or the Samojeds you would have to stand things much worse." Perhaps such an education even accomplishes some good. Sometime later in his life (1898) when on a journey through Tyrol, Mach overheard one of his trav-

eling companions, an elderly officer, give the following answer to a question about the particular architecture of some church: "I'm sure I don't know; I don't go to church any more. I had enough of compulsory mass and religious exercises in the Gymnasium." On the whole Mach's attainments in this school must be looked upon as but very ordinary,—probably chiefly because he did not receive the call to his life's vocation here, for that had already been determined before he entered this school.

Mach was finally graduated from the Kremsier gymnasium, and he could not help considering it an especial piece of luck because of his bad memory and the custom at that time to make the tests include every conceivable detail. His good fortune was illustrated by the fact that at the same time the boy who was first or second in the class was prevented by the chairman of the commission, the so-called school councilor, from passing, probably because that gentleman suffered from an attack of Cæsaromania. The poor fellow, to be sure, was not a shining light but so industrious and conscientious that he would certainly have filled a place creditably in any walk of life. Those who failed to graduate were at that time admitted to the study of theology, and while pursuing this course Mach's unfortunate schoolmate died.

At the age of seventeen Mach matriculated at the University of Vienna in order to devote himself to the study of mathematics and physics. Count Leo Thun, the minister of instruction, had, to be sure, introduced many reforms into the university by appointing to its faculty many scholars of a high grade, and yet the departments of mathematics and physics were hardly touched by this change. At first indeed the new era of liberalism in instruction seemed only to have the result of entirely neglecting the needs of beginners. Students were obliged to gain the indispensable knowledge of differential and integral calculus

by themselves in order to be able to understand the lectures offered in the courses of the university.

Of these lectures the addresses of Von Ettingshausen on mathematical physics certainly did not deserve the insolent and highhanded judgment with which they were branded in a lecture by Liebig, who was not even well posted in this department. It is true that Ettingshausen was not a creative genius in his line to any important extent, but such investigators were rare enough even in Germany at that time, the French being then still in the lead in scientific work. Petzval was a highly talented teacher of mathematics, somewhat indolent and rather unapproachable; he is known for the reforms he has worked in photographic optics. Stimulating too were the lectures of young Professor Grailich whose career at the university, however, was early terminated by his death. Ettingshausen was also director of the Physical Institute, the first institution of its kind, at least at that time, in Austria and Germany.

While at the university, Mach succeeded in bringing to completion his first modest work which was an apparatus that he had himself designed and for the most part constructed and which was followed by several other similar tasks. In January, 1860, Mach took the degree of Doctor of Philosophy according to the somewhat medieval custom of the time which required the applicant to pass three tests in several subjects of two hours each, insisting upon a mere diversified smattering which was at the same time compatible with great ignorance. Because of his slender means Mach was now compelled to renounce his ardent wish to take advantage of the instruction of F. Neumann in Königsberg, and instead he was obliged to consider how to gain his own livelihood by giving private lessons.

However, under these discouraging circumstances he was bold enough to qualify as a private docent in physics without knowing how he was to live the following year.

Indeed at this juncture it was indispensable for him to earn money by private lectures on mathematics, Fechner's psychophysics and Helmholtz's tone sensations as well as by ordinary tutoring, in order to make both ends meet. Naturally in this way valuable time was lost which might have been spent on study for himself and in his own particular work. Still Mach's lectures soon attracted a number of select hearers who afterwards became famous. By his intercourse with the two important physiologists of Vienna, E. Brücke and C. Ludwig, Mach gained an insight into the scientific life of Germany and came also upon a line of work which he could follow with some success without any particular scientific equipment. This was the domain of the physiology of the senses which gradually led him to his critical researches in the theory of cognition.

By a happy accident Mach was appointed in 1864 to fill the vacancy in the chair of mathematics in the then somewhat neglected University of Gratz at a salary of ten hundred and fifty gulden. This appointment came just as his strength was about to fail him, but he now soon recovered when thus relieved from actual want and privation. Three years later he became professor of physics at the University of Prague, which offered him also the opportunity to invest in more extensive equipment for experimental work. His remuneration of 1300 gulden gave him courage to marry Luise Marussig, with whom he had become acquainted as an orphan in Gratz. Now he lived in the most modest manner, obtained a circle of zealous pupils and from 1868 to 1881 saw his family of four sons and one daughter grow up about him. In the meantime he had lost his mother in 1868 and his father in 1880, who had bought property in Carniola, and as a consequence of a series of especially bad harvests had remained burdened with cares to the end of his life.

Mach too endured a period of great anxiety when in

1880 the attendance at the German university at Prague fell off greatly because of the establishment of the Bohemian university there, and his own income was correspondingly diminished. Then he endeavored to repair the loss by special technical work. In fact in a few weeks he earned about as much as a year's salary but realized at the same time that this manner of living could not be combined with scientific work. The money he had made, however, made it possible for him to attend a congress of electricians at Paris in 1881 which was of so great an advantage to him by the increased inspiration it gave him, the new personal acquaintances he formed and the additional employment obtained through them, that his financial situation was greatly improved in the following years.

By this time Mach had obtained sufficient leisure to prepare for publication his critical studies in the theory of cognition. In 1883 he published his *Mechanics*[1] and soon afterwards his *Analysis of the Sensations*.[2] Perhaps he placed too high a value upon the importance of these works, for he was so unwilling to be turned aside from them that in order to remain in his present position he determined to reject an advantageous call to Munich. Since his studies in the theory of cognition were now greatly interrupted by many experiments, even though the number of young people taking part in the latter was constantly increasing, Mach accepted an invitation of the University of Vienna in 1895 to take the chair of philosophy which made it possible for him to give his exclusive attention to his critique of cognition. Shortly before this he suffered

[1] The full title was *Die Mechanik in ihrer Entwickelung historisch-kritisch dargestellt.* English translation by T. J. McCormack, *The Science of Mechanics: A Critical and Historical Account of Its Development,* Chicago, Open Court Pub. Co., 3d ed. 1907.

[2] *Beiträge zur Analyse der Empfindungen.* Engl. ed., *Contributions to the Analysis of the Sensations,* transl. by C. M. Williams. Chicago, Open Court Publishing Co., 1897.

the loss of a talented son who ended his life by suicide after a fine promotion in Göttingen.

Mach's *Principles of the Theory of Heat*[3] which deals essentially with the critique of cognition was published in 1896. During the preparation of a corresponding work upon optics (1898) Mach suffered a stroke of apoplexy which crippled him permanently without however destroying consciousness or memory. His capacity for work was so diminished for a few years that he could accomplish nothing except new editions of earlier writings. A portion of the lectures held by Mach at Vienna in 1895 were not published until 1905 when they appeared under the title *Cognition and Error*.[4]

* * *

The principles which Professor Mach followed in explaining the progress of science have been laid down in a recent article of his which appeared under the title "My Leading Thoughts."[5] Remembering what Professor Mach said of his life when he worked on a farm and passed through a period of apprenticeship as a cabinet maker, we can well understand that he saw in science only a product of the division of labor. Science appeared in the course of human evolution because it was needed for economical reasons, and the methods of science themselves must be economical. Thus Mach arrived at the conclusion that the method of science consists in an economy of thought. Science is a survival of the fittest, and those scientific theories survive which are best adapted to facts; our thoughts are an adaptation of thinking to facts and also of thought to thought. Professor Mach says:

"When in the beginning of my educational work as

[3] *Die Principien der Wärmelehre.* English translation in preparation.

[4] *Erkenntnis und Irrtum.*

[5] *Die Leitgedanken meiner naturwissenschaftlichen Erkenntnislehre und ihre Aufnahme durch die Zeitgenossen.* Published in *Scientia*, Vol. VII (1910) No. XIV, 2.

private docent of physics in 1861 I began to pay attention to the labors of investigators to whom I had occasion to refer, I recognized that the salient characteristic of their procedure lay in the choice of the simplest, most economical, most direct means to attain the end desired. Through my intercourse in 1864 with the political economist E. Hermann, who, according to his specialty, sought to trace out the economical element in every kind of occupation, I became accustomed to designate the intellectual activity of the investigator as economical. This becomes apparent in the simplest instances. Every abstract comprehensive expression of the behavior of facts, every substitution of a numerical table by a formula or rule of construction, the law by which it was compiled, every explanation of a new fact by one that is better known, may be regarded as rendering an economical service. The farther we analyze in detail scientific method—its systematic, organizing, simplifying and logico-mathematical arrangements—the more we recognize scientific procedure as economical."

Starting from the economical standpoint, Mach was well prepared to understand the progress of science, which is an advance from complicated explanations to more and more simple ones, as for instance Kepler's laws were replaced by a single formula of Newton, which expresses them all in the equation

$$\frac{d^2r}{dt^2} = \frac{mm^1}{r^2}$$

As economists teach that the wealth of nations is increased by economy, so Professor Mach sees the cause of scientific progress in an economy of thought, an idea which was foreshadowed by Adam Smith. Mach has worked out and exemplified this idea in many of its details and made it a cornerstone of his conception of science.

He felt isolated in his mode of thinking for a long

time, but gradually he found straws in the wind which indicated that similar views began to prevail in other quarters. As such he mentions the conception of Avenarius's "Philosophy as a Mode of Thinking the World According to the Principle of the Least Effort" (1876); also Petzoldt's "Introduction to the Philosophy of Pure Experience" (1900); Schuppe's "Logic of the Theory of Cognition" (1878); and W. J. M. Rankine's "Outlines of the Science of Energetics" (1855), which latter work is also a predecessor of Ostwald's "Energetics." Professor Hertz once said that Maxwell's theory consisted practically of Maxwell's equations; and finally P. Duhem in his "Physical Theory" quietly surrendered the old metaphysical standpoint.

Professor Mach's lifework is that of a scientist who has paid special attention to scientific method. He is not a philosopher, as he himself has frequently stated. He is a scientist who feels the need of comparing his science with other sciences and becomes conscious of the nature of the method in his work. If such is philosophy he ought to be called a philosopher and we would be the last to begrudge him the name; nevertheless we would not classify him as a typical philosopher, for he halts at the place where a philosopher ought to begin work. He discovers the principle of an economy of thought and the mode of action which science instinctively pursues wherever scientists work. Nowhere in his writings has he attempted to investigate the nature of this principle, which he would have done if he were a philosopher in the common acceptance of the word.

In further explanation of Mach's theory we would say that a philosophical explanation of his principle of economy can be given and is to be found in the nature of the purely formal sciences. We have set forth our explanation of the significance of the purely formal sciences in other articles

and do not propose to repeat ourselves. We will only say that the dissatisfaction which Professor Planck experiences in reading Professor Mach's works is caused perhaps to a great extent by Professor Mach's unwillingness to enter into any investigation of the nature of generalities of any kind, be they theories, generalizations or the conception of units. The fact is that this is not a shortcoming of Mach's as much as an unwillingness to work in a definite field where he feels uneasy. As soon as Professor Mach loses the solid ground of concrete facts he feels the thin air of abstraction, and he has a deep seated prejudice against anything that is not tangible or sensible. Generally speaking, theories become inaccessible to sense perception. Thus the scientific concept of a kinetic physical world such as is constructed in the theory of atoms, is to him a respectable hypothesis, nothing more; and he refuses to accept Professor Planck's idea that these atoms are the only true realities.

We will not enter at present into an exposition of these two contrasts, but will only say that Professor Planck did not understand Mach and rather hastily called him "a false prophet," in response to which Professor Mach has most emphatically protested against dogmatism in science, saying: "We can see that the physicists are on the surest road to becoming a church, and are already appropriating all the customary means to this end. To this I simply answer: 'If belief in the reality of atoms is so essential for you I hereby abandon the physicists' manner of thought (Planck, p. 31), I will be no regular physicist (*ibid.*, p. 33), I will renounce all scientific recognition (*ibid.*, p. 35); in short the communion of the faithful I will decline with best thanks. For dearer to me is freedom of thought.'"

A few quotations will characterize Professor Mach's view in his own words. He says:

"We have colors, sounds, pressures, and so forth (A

BC...), which as simplest component parts, make up the world. In addition thereto, percepts (resolvable into $\alpha\beta\gamma$...), feelings, and so forth, more or less composite. How $\alpha\beta\gamma$... differ from A B C... I will not define here, for I do not know exactly. It is enough for the time being that they do differ from A B C..., as the latter do from one another. And let us now leave $\alpha\beta\gamma$... entirely out of account and put ourselves in a time and state in which there are only A B C. Now I say, that if I see a tree with green leaves (A), with a hard (B), gray (C) trunk, that A B C are *elements* of the world. I say *elements*—and not sensations, also not notions—because it is not my purpose at this place to arrive at either a psychological or a physiological or a physical *theory,* but to proceed *descriptively.*" (*Monist,* I, 394).

"For us, therefore, the world does not consist of mysterious entities, which by their interaction with another equally mysterious entity, the ego, produce sensations, which alone are accessible. For us, colors, sounds, spaces, times, ... are the ultimate elements, whose given connection it is our business to investigate...

"Science always takes its origin in the adaptation of thought to some definite field of experience. The results of the adaptation are thought-elements, which are able to represent the field. The outcome, of course, is different, according to the character and extent of the province surveyed. If the province of experience in question is enlarged, or if several provinces heretofore disconnected are united, the traditional, familiar thought-elements no longer suffice for the extended province. In the struggle of acquired habit with the effort after adaptation, *problems* arise, which disappear when the adaptation is perfected, to make room for others which have arisen in the interim...

"If we regard *sensations,* in the sense above defined, as the *elements of the world,* the problems referred to are

practically disposed of, and the *first* and most important adaptation effected" (*Anal. of the Sensations,* 23-25).

Professor Mach's principle which we heartily endorse is "to proceed descriptively," and we must distinguish between facts and theories. The question is only, What are facts?

Professor Mach insists that the only realities are the elements of the world. Even the unity with which these sensations fuse into things is suspected by Mach. He has acquainted himself with Kant's idea of the thing-in-itself and has come to the conclusion that there is no sense in accepting a thing-in-itself, but in the thing-in-itself he rejects the reality of these unities of the elements of sensation which we call things. To think of a non-sensual bond of the elements in the form of a substratum of their quality and in the form of a substance of the body in the old philosophical sense is excluded, and so he speaks of this idea as being due purely to poetic imagination.

Here Mach goes too far. While we ourselves would reject most emphatically the assumption of things-in-themselves, we are not prepared to deny the reality of things; or in other words we would recognize that a group of elements of existence (and it is here indifferent whether we say of reality or of sensation) are compounded into unities which constitute the thing. These unities are not mere fictions, they are realities, for the very way in which unities combine actually makes new things. A watch becomes a watch when the works are so constructed that its wheels move and its hands point out the time. The bond which interconnects the parts of the watch is not indifferent but the mode of the composition of the parts is essential, and either does or does not produce a new unity which we call a thing. Aside from the reality of its parts their interaction constitutes what we call a watch. If a certain number of elements into which Mach analyses his sensation are com-

bined in what we call the sensation of a thing, an actual unity is produced which we will call the object of perception, and this unity is not due, as Mach seems to say, to our own poetic imagination, but we are confronted with a unity which is the result of a definite cooperation, and there is a good reason for assuming that the unities of perception are founded in the nature of things. The combined parts of a tree constitute an organism which is more than merely the sum total of all its elements. The same is true of other non-sensual unities, as well as of generalities.

It seems to us that the primitive realities are the things with which we become acquainted. They are the given facts, and we call them the data of experience. What Mach calls the elements of existence are not so primitive as he seems to assume. His elements are really the result of an analysis; they are of an artificial nature and can exist only in the mind of a highly trained scientist like Professor Mach. If they were truly elements in the sense of ultimate realities, or what we call data of experience, they would be more obvious to the unsophisticated observer, to the child, to the peasant, to the unschooled, but we would look in vain for any clear conception of these elements. The naive observer of life knows only of whole things and of their several activities, not of their ingredients or elements. And the reason is obvious when we understand that the unities of things are as such actualities, and these actualities affect man's senses and become the objects of his observation.

We must assume that the sense impressions of a baby are not distinct elements such as hardness, whiteness or greenness, sweet or sour tastes, definite notes or distinct sounds, etc., but a chaotic mass of feelings, a kaleidoscopic blur from which certain groups gradually and clearly rise. Things and persons are such groups. They consist of elements of sensation, but the groups themselves are heeded

and not their several elements. These groups are constants, i. e., combinations which are stable, and the unity of a group of sensations is conditioned by the unity of things themselves.

These unities are made by nature, they are founded upon the existence of unities in the objective conditions of the world; they are not purely mind-made nor are they artificial. The mental image of a cat exists prior to the distinct notions of the several sensory elements of which a cat-perception is composed, and we have no doubt that what an animal sees is a thing, but not the sense elements into which the physiological psychologist can analyze it.

Mach is a representative of the old nominalistic school. According to its principles things are mere names, and the further application of this appears in their conception of the nonexistence of generalizations. Nominalists treat abstract ideas as inventions of a purely subjective nature.

The generalizations of what we call natural laws are not mere fictions, but they represent general features in the world of reality which though they are in no definite place can be traced wherever the conditions are fulfilled. The laws of nature in their perfected shape are not mere theories, but uniformities, and by uniformities we understand descriptions of fact—not of concrete facts in a compact existence, but generalized formulas of the essential features of certain phenomena, which summarize the essentials that determine certain results.

Accordingly the picture of the world which science aims at is not a mere illusion but aspires to the actualization of a predetermined ideal, which would be a description of the characteristic features of the constitution of the world.

What Professor Mach calls "elements of the world" we call "data of experience," and whatever we are compelled to grant existence independently from our thought we call fact. The data of experience are facts, but in addi-

tion there are other facts with which we become acquainted by inference and we see no fault in assuming them to be as real as the data of experience.

Our point of view is different from Mach's, but, like himself, we see no harm in approaching a problem from different standpoints, yet we wish that Mach had in his own way gone one step further in the work of explaining the nature of science, by pointing out why an economy of thought is possible. This would have led him to the conclusion which we have offered in what may be called the philosophy of form. The formal sciences are different from the sciences of experience in this important point, that they are systematic, and the systematic nature of the formal sciences makes it possible to systematize thought. The sameness of form as form under different conditions makes it possible to think of different things of the same shape as types, and thus logic can classify things always according to their forms as genera and species. If experience could not be treated by the formal sciences, they would present a chaos of detailed items which would never allow us to reduce them to order. It is obvious therefore that the formal sciences alone offer us the methods through which an economy of thought is possible.

We do not wish to exaggerate the difference between Professor Mach's views and our own. We will therefore state that Professor Mach also insists on the significance of form, but he speaks of it as the functional dependence of the sense elements upon one another (*funktionelle Abhängigkeit der sinnlichen Elemente von einander*). However, we believe that our thoughts are on converging lines. We have no right to criticize Professor Mach for not having followed out a problem which he had not proposed to himself, and at the same time, we feel the injustice of those of his critics who would demand of him that he should use

the same expressions as are commonly in use among physicists.

Professor Mach is right that physics is only one mode of picturing the world, and the physical world-picture does not exhaust the nature of being. There are other points of view which can be taken. The psychical facts are not less true and the bio-economical mode of viewing the world is certainly as much justified as the physical theory.

It is the duty of philosophy to bear all this in mind. The scientific conception is of crucial importance, but the religious, the poetic, the artistic, the emotional aspects have rights of their own and it would be an indication of narrow-mindedness not to allow them their right of existence. If they in their turn raise the claim of exclusiveness and if the church attempts to curb science or free scientific inquiry, we complain about intolerance; should science now walk in the footsteps of the old dogmatism?

We can live in peace with every point of view if we proceed descriptively, and while we state facts we need not be inhospitable to theory. It may sometimes be difficult to draw the line between facts and theory, but it is possible, and problems of this nature can be settled.

The truth is that science as well as religion passes through a period of myth formation which is quite natural in so far as man fills out the gaps of his knowledge in the most plausible way, according to the then obtaining conditions of the state of his mind. The fictions which we thus introduce into science by analogy, or as helps to think the unknown in terms of the known, may be wrong or, as is mostly the case, only partly right, but they serve a good purpose as approximations to the truth. Beyond them looms the ideal of all science which is a generalization of descriptions of fact—or of features of factual reality in the shape of accurate formulas.

We are not blind followers of Professor Mach, but we

see that he has promoted the scientific comprehension of the nature of scientific method as few others have done in the history of science. For generations to come his works will remain classical instances of the genuine spirit of science, exemplifying the attempt at an accurate description of facts—in the search for truth.

There is one peculiarity about Professor Mach's writings. He appeals most powerfully to a certain type of thinkers who distrust theory and wish to remain in contact with facts. Among these readers are not only naturalists and inventors, but also people who have not passed through the mill of academic or scientific training. Of the former class I recall the high esteem with which Nicola Tesla spoke of Mach, and of the latter I will mention a remarkable Scotch workman, John Glen of Glasgow, with whom I have been in correspondence. Mr. Glen is typical of that class of men who naturally find in Mach a source of inspiration, and though he is unusual in his attainments, acquired by his own efforts while living on the returns of manual labor, I am sure that there are many more real thinkers scattered among the working classes of all countries.

Mr. Glen takes an interest in the problems of life, the soul and kindred subjects. He has familiarized himself with standard books and expresses his views thus:

"The history of metaphysical psychologies or philosophies is merely one long sorrowful sequence of credulities dogmatically imposed upon the world's unwary, and when I reflect on the public boastfulness of the latter (the mundane gods) and their relative capacities to think, I am impelled to say that they have not yet begun to think of thinking. They can not distinguish between an artful assertion and a demonstration. In short, these types of men are the sports of a derelict brain afloat on an ocean of memories dangling in imagination."

It speaks well for Mach that a man of this type, a self-trained thinker of independent judgment, who does not accept traditional theories on authority, finds himself indebted to Mach's works, his *Aanalysis of the Sensations,* and especially to the *Science of Mechanics,* and agrees with the view of a friend who speaks of Mach as "a philosophical landmark."

There is an individualistic tendency now current in the world of science and philosophy; it is a reaction to both the absolutism in philosophy which reached its climax in Hegel, and the materialistic dogmatism of science which is most drastically represented in Karl Vogt and Büchner, while it found its best and most dignified exponent in Haeckel. Both contrasts are wrong. They are formulations of an exaggerated objective philosophy and the opposition to it shows itself most potent in the individualistic upheaval of pragmatism with its denial of "truth" in the singular and its advocacy of "truths" in the plural. But pragmatism is only a symptom of a movement that has spread over a wide circle of thinkers in France and Germany who are not directly allied to it. Mach is not, properly speaking, a pragmatist, but he prepared the movement and belongs to it; indeed he is its most important pioneer on account of the sober and truly scientific character of his work. It is true he is not typical of pragmatism itself because he does not go to extremes as did William James. The pathological feature is absent in him, but for that reason he is greater than his successors and by his methods we gain a vantage ground for scientific work. He does not block our path by erroneous theories, and his individualistic tendency is due to the fact that he fights shy of metaphysical theories. Yet even from individualistic principles we can reach a conception of truth in the singular, or, to put it more guardedly, of system in the bewildering details of scientific inquiry.

Mach is an individualist but he keeps within bounds, he does not fly off in a tangent when he hesitates to assume the metaphysical arguments for an objectivism of theories, and so there is naught of pluralism in him, naught of subjectivism, naught of a denial of truth in the singular. We have no right to blame him if he only tentatively and almost timidly outlines the presence of a oneness, not as an objective fact, but as an efficient factor in this world in which economy can accomplish such wonderful results not only in the domain of industry and commerce, but also in science. Mach knows very well that economy is due to systematizing, and systematizing presupposes the possibility of system. Mach has been very instructive to me because he is so cautious. I shall be the last to reproach him for limiting his work to the field which has proved fittest for his talents, his interests and the history of his scientific development. I hope that I have taken the step for the omission of which he has been blamed and decried as a wrong prophet. I would scarcely have been able to accomplish the work he did, and if my work will help to complete his, I shall feel happy and be proud that I could cooperate with a man of his significance.

Let me add that Mach is not only great as a scientist, but also as a man, and I wish that other scientists would imitate his unpretentious habits and the breadth of his mind in not refusing to learn from others and to acknowledge their merits even if they were his inferiors in scholarship and training.

EDITOR.

EARLY ATTACKS ON CHRISTIANITY AND ITS DEFENDERS.

SO long as Christianity was regarded by the Romans as a mere sect of Judaism, it shared the hatred and contempt, indeed, but also the legal protection bestowed on that religion. But as soon as Christianity claimed to be a new religion, claiming universal validity and acceptance, it was set down as unlawful and treasonable, a *religio illicita,* whose adherents have no right to exist, or as Tertullian puts it, *"non licet vos esse."* The Christians were then made responsible for everything. The wildest tales were believed. The Christians were charged with preaching in their assemblies all acts of abominations, even incest and cannibalism; priests, jugglers, artificers, merchants and others kindled the fanaticism and indignation of the mob against the new religion because it interfered with their mercenary practices.

It is difficult to estimate the number of Christians in the Roman Empire in the first two centuries. It may perhaps be a rhetorical exaggeration when Justin writes in the middle of the second century: "There is not one single race of men, whether barbarians or Greeks, or whatever they may be called, nomads or vagrants, or herdsmen living in tents, among whom prayers and giving of thanks are not offered through the name of the crucified Jesus";[1] or when Tertullian writes at the end of the century: "We

[1] Dialogue with Trypho, ch. CXVII.

are but of yesterday, and we have filled every place among you,—cities, islands, fortresses, towns, market-places, the very camp, tribes, companies, senate, forum,—we have left nothing to you but the temples of your gods."[2] But there can be no doubt that the number of Christians must have been large enough to attract attention; they were even found in old Roman families.

By the edict of Claudius (41-54) in the year 53, the Jews were banished from Rome. As the Christians were confounded with the Jews, they too were included in this edict. Suetonius tells us[3] that Claudius expelled the Jews from Rome because they were constantly raising tumults *impulsore Chresto,* "under the instigation of Chrestos." It is very probable that in this *impulsor Chrestus*[4] is preserved a dim reminiscence of the fact that Christianity, then finding an entrance into Rome and dividing the Jewish population of Rome into two parties as was often the case in other places, gave an impulse to those disturbances which determined the emperor to issue his edict. Here, however, Christianity still appears quite under the umbraculum of the Jewish religion, as a *religio licita,* a protection which of course could only extend as far for the Christians as it was granted to the Jews.

In the reign of Nero (54-68) the Christians are for the first time introduced into history in a manner worthy of them. When, as Tacitus tells us, the great conflagration under Nero[5] had destroyed the greatest part of the city of Rome, and popular report pointed persistently to Nero as the incendiary, he sought to meet these rumors by casting the blame upon others, and inflicting the most extreme

[2] Apology, ch. XXXVII.

[3] *Vita Claudii,* ch. XXV. Among those expelled by the edict of Claudius were Aquila and Priscilla, the friends of Paul.

[4] The heathens used to say Chrestus instead of Christus (Tertullian, *Apol.* ch. III).

[5] *Annales,* XV, 44.

punishments on those whom the people called Christians,[6] and hated on account of their "infamous acts." In derision they were sewed up in the skins of wild beasts, torn to pieces by dogs, nailed to the cross, or being dressed in clothes that were prepared with inflammable material, were doomed to death by fire, to serve as an illumination at night.[7] They were held convicted, as Tacitus says, not so much because the charge laid against them of being the authors of the conflagration had proved to be well founded, as on account of their general hatred of the human race.[8] And their *odium humani generis* was a disposition so hostile to all other men that those who had dealings with them were justified in disregarding all those observances by which men are generally bound in dealing with each other. "They are thus marked off," Baur remarks, "as a class of men who had only to thank themselves and their entire want of all humane culture and disposition, if all considerations of humanity were put out of court in dealing with them.

This, then, was the view taken of the Christians by the Roman public of that age, and hence the *subdere reos* (i. e., those falsely charged with the guilt) that we read of was tolerated; the matter was considered to be perfectly regular. Even Tacitus takes this view of the transactions; he says not a word to indicate disapproval of these atrocities: on the contrary, the expressions he uses in reference to Christianity show clearly enough that he considered the procedure against them to be sufficiently justified."

Tertullian (who died about 220) thus alludes to the Neronian persecution: "This name of ours took its rise

[6] *"Quos per flagitia invisos vulgus Christianos adpellabat."*

[7] Juvenal (*Sat.* I, 155 f.) who probably was an eye witness, describes how,

"At the stake they shine,
Who stand with throat transfixed and smoke and burn."

[8] *"Haud perinde in crimine incendii, quam odio humani generis convicti sunt."*

in the reign of Augustus; under Tiberius it was taught with all clearness and publicity; under Nero it was ruthlessly condemned (*sub Nerone damnatio invaluit*), and you may weigh its worth and character even from the person of its persecutor. If that prince was a pious man, then the Christians are impious; if he was just, if he was pure, then the Christians are unjust and impure; if he was not a public enemy, we are enemies of our country: what sort of men we are, our persecutor himself shows, since he of course punished what produced hostility to himself. Now, although every other institution which existed under Nero has been destroyed, yet this of ours has firmly remained—righteous, it would seem, as being unlike the author [of its persecution]."[9]

"This was the first of the persecutions, the fiery portal as it were, through which the Christians entered the arena in which they were now called to strive, to bleed, to die for their faith during two and a half centuries. This first persecution was no carefully planned attempt to suppress Christianity, founded upon civil or religious policy, but only a cruel outburst of hatred, which Nero turned to account in his own interest. Heathenism had not as yet learned to understand Christianity at all. It appeared to the heathen as something entirely strange, utterly opposed to every existing and traditional belief, and the Christians were regarded as men who, since they hated everything human, deserved nothing but hatred in return. Therefore, in dealing with them anything was permissible, and all considerations of humanity might be set aside. Now Christians might learn what awaited them. Heathenism had openly declared by action that Christianity was not to be tolerated, that it was to be annihilated as inhuman, hostile to the human race. Now, too, might the heathen know what they had to expect from the Christians. In

[9] *Ad Nationes*, I, 7.

patient silence they endured all. The heroic age of the Christian church had begun, a heroism not of action, but of a suffering mightier than all deeds" (Uhlhorn).

Nero's successors, Galba, Otho, and Vitellius, followed one another in rapid succession. The latter was taken out of a dog's kennel in Rome while drunk, dragged through the streets, and shamefully put to death. Vespasian, in the year 69, was universally proclaimed emperor, and restored order and prosperity.

His son, Titus, who ten years after became emperor and highly distinguished himself by his mildness and philanthropy,[10] then undertook the prosecution of the Jewish war, and becoming the instrument in the hand of God, destroyed the holy city and the temple. The Christians of Jerusalem, remembering the Lord's admonition, forsook the doomed city in good time and fled to the town of Pella, where King Herod Agrippa II, before whom Paul once stood, opened to them a safe asylum. The destruction of Jerusalem was the greatest calamity of Judaism, but a great benefit to Christianity. The rupture between synagogue and church was now also outwardly consummated by the thunderbolt of divine omnipotence. Henceforth the heathen could no longer look upon Christianity as a mere sect of Judaism, but must regard and treat it as a new, peculiar religion.

Under the suspicious and tyrannical Domitian (81-96), accustomed to call himself and to be called "Lord and God,"[11] Christianity was again made the object of direct attack. The charge now brought against the Christians was that of atheism; an inference from their refusal to pay honor to the gods of Rome. Under this accusation Flavius Clemens, the emperor's uncle, is said to have suf-

[10] The people called him *Amor et Deliciae generis humani.*

[11] Suetonius, *Domit.* 13, says: "With equal arrogance, when he dictated the form of a letter to be used by his procurators, he began it thus: 'Our Lord and God commands so and so.'"

fered martyrdom, while Domitilla, the wife of Clemens, was banished on a similar charge to the island of Pandateria, near Naples.[12] Eusebius[13] also relates that Domitian, apprehensive of the appearance of a "Son of David" as a rival claimant to the throne, caused rigorous inquiries to be made in Palestine, which led to the apprehension of the grandsons of Jude the Lord's brother (Mark vi. 3). The simplicity, however, of their garb and demeanor, and the marks of labor on their horny hands, convinced the tyrant that he had nothing to fear from them, and he accordingly dismissed them with contempt. Domitian is also said to have banished the apostle John to Patmos, where he beheld the visions of the Apocalypse.[14]

Domitian's successor, the humane and justice-loving Nerva (96-98), recalled the banished, and refused to treat the confession of Christianity as a political crime, though he did not recognize the new religion as a *religio licita*.

Under his successor Trajan (98-117), Christianity was forbidden. Of famous martyrs we mention Symeon, bishop of Jerusalem, who, like his predecessor James,[15] a kinsman of Jesus, was accused by fanatical Jews, and crucified A. D. 107, at the age of a hundred and twenty years.[16] In the same year (or according to others in 115), the distinguished bishop Ignatius of Antioch was condemned to death, transported to Rome, and thrown before wild beasts in the Colosseum. Trajan, wholly ignorant of the nature of Christianity, was the first formally to pronounce it a proscribed religion, as it had been all along in fact. He revised the rigid

[12] Dion Cassius (in the abridgment of Xiphilinus) *Hist. Rom.* 67, 14, in Preuschen, *Analecta*, p. 131.

[13] *Hist. Eccles.*, III, 19, 20.

[14] Some think that John was banished under Nero. The Syriac version of the Apocalypse refers the banishment of John to the days of Nero.

[15] His martyrdom is described by Hegesippus in Eusebius, *Hist. Eccles.*, II, 23; see also Josephus, *Ant.* XX, 9, 1.

[16] Eusebius, *loc. cit.*, III, 32.

laws against all secret societies or prohibited clubs,[17] and these laws were so framed as to include the Christian community in their operation. The celebrated correspondence[18] between the Emperor and Pliny the younger, who was governor of Bithynia in Asia Minor between 109-111, must be inserted here, both as throwing light upon the Roman policy, and as affording an instructive picture of the early churches.

Pliny to Trajan.

"It is with me, sir, an established custom to refer to you all matters on which I am in doubt. For who is better able either to direct my scruples or to instruct my ignorance?

"I have never been present at trials of Christians, and consequently do not know for what reasons, or how far, punishment is usually inflicted or inquiry made in their case. Nor have my hesitations been slight as to whether any distinction of age should be made, or persons however tender in years should be viewed as differing in no respect from the full-grown; whether pardon should be accorded for repentance, or he who has once been a Christian should gain nothing by having ceased to be one; whether the very profession itself, if unattended by crime, or else the crimes necessarily attaching to the profession, should be made subject of punishment.

"Meanwhile, in the case of those who have been brought before me in the character of Christians, my course has been as follows: I put it to themselves whether they were or were not Christians. To such as professed that they were, I put the inquiry a second and a third time, threatening them with the supreme penalty. Those who persisted I ordered to execution. For, indeed, I could not doubt, whatever might be the nature of that which they professed, that their pertinacity, at any rate, and inflexible obstinacy, ought to be punished. There were others afflicted with like madness, with regard to whom, as they were Roman citizens, I made a memorandum that they were to be sent for judgment to Rome. Soon, the

[17] The Roman sodalities or colleges were festive clubs or lodges. But on account of the political and revolutionary ends which they pursued, Julius Cæsar had already dissolved them (Suetonius, *Div. Julius*, 42). The same was done by Augustus (Suetonius, *Div. Aug.*, 32). Compare Mommsen, *De collegiis et sodaliciis Romanorum*, Kiel, 1843.

[18] For the text and literature, see Preuschen, pp. 14 ff.

very handling of this matter causing, as often happens, the area of the charge to spread, many fresh examples occurred. An anonymous paper was put forth, containing the names of many persons. Those who denied that they either were or had been Christians, upon their calling on the gods after me, and upon their offering wine and incense before your statue, which for this purpose I had ordered to be introduced in company with the images of the gods, moreover, upon their reviling Christ—none of which things it is said can such as are really and truly Christians be compelled to do—these I deemed it proper to dismiss. Others named by the informer admitted that they were Christians, and then shortly afterwards denied it, adding that they had been Christians, but had ceased to be so, some three years, some many years, more than one of them as much as twenty years, before. All these, too, not only honored your image and the effigies of the gods, but also reviled Christ. They affirmed, however, that this had been the sum, whether of their crime or their delusion: They had been in the habit of meeting together on a stated day before sunrise, and of offering in turns a form of invocation to Christ, as to a god; also of binding themselves by an oath, not for any guilty purpose, but not to commit thefts, or robberies, or adulteries, not to break their word, not to repudiate deposits when called upon; these ceremonies having been gone through, they had been in the habit of separating, and again meeting together for the purpose of taking food—food, that is, of an ordinary and innocent kind. They had, however, ceased from doing even this after my edict, in which, following your orders, I had forbidden the existence of fraternities. This made me think it all the more necessary to inquire, even by torture, of two maid servants, who were styled deaconesses, what the truth was. I could discover nothing else than a vicious and extravagant superstition, and so, having postponed the inquiry, I have had recourse to your counsels. Indeed, the matter seemed to me a proper one for consultation, chiefly on account of the number of persons imperilled. For many of all ages and all ranks, aye, and of both sexes, are being called, and will be called, into danger. Nor are cities only permeated by the contagion of this superstition, but villages and country parts as well; yet it seems possible to stop it and cure it. It is in truth sufficiently evident that the temples, which were almost entirely deserted, have begun to be frequented, that the customary religious rites which had long been interrupted are being resumed, and that there is a sale for the food of sacrificial beasts, for which hitherto very few buyers indeed

could be found. From all this it is easy to form an opinion as to the great number of persons who may be reclaimed, if only room be granted for penitence."

The reply of the Emperor was as follows:

Trajan to Pliny.

"You have followed the right mode of procedure, my dear Secundus, in investigating the cases of those who had been brought before you as Christians. For, indeed, it is not possible to establish any universal rule, possessing as it were a fixed form. These people should not be searched for; if they are informed against and convicted they should be punished; yet, so that he who shall deny being a Christian, and shall make this plain in action, that is, by worshiping our gods, even though suspected on account of his past conduct, shall obtain pardon by his penitence. Anonymous information, however, ought not to be allowed a standing in any kind of charge; a course which would not only form the worst of precedents, but which is not in accordance with the spirit of our time."[19]

In fact the edict of Trajan marks an epoch in history, because it formally and absolutely denies to Christianity for the first time a legitimate existence in the Roman state. The Christians could remain in peace so long as no accuser came forward. No wonder therefore that Tertullian exclaimed: "What a self-contradictory sentence! He forbids their being sought out, as if they were innocent, and commands that they be punished as if they were guilty."[20]

The rescript of Trajan continued under the following emperors to be the legal rule for the treatment of the Christians. To be a Christian was clearly designated as a crime that must be suppressed. As the number of the Christians increased the hatred of the heathen population towards them rose also, and it happened more and more frequently that Christians were accused and executed for no reason but the Christian name. There was no possible relief against so unrighteous a procedure, until the time should

[19] Pliny, *Epist.*, X, 97, 98. See Neumann, *Der römische Staat*, pp. 18-26.

[20] *Apol.*, II.

come when the whole view taken of Christianity in the Roman empire would undergo an essential change.

As at this time the Christians had among them men of sufficient culture and learning to plead the cause of Christianity, an effort was made in that direction in the period immediately after Trajan's edict. Defensive writings known as "apologies" were addressed to the emperors, the governors of the provinces, and to the great public in general. Whatever effect they may have had otherwise, they certainly had no effect upon those whom they were intended to influence.

Trajan's successor, Hadrian (117-138), was indifferent to Christianity because of his ignorance of it.[21] It is true that he directed the Asiatic proconsul Minucius Fundanus to check the popular fury against the Christians, and to punish only those who should be, by an orderly judicial process, convicted of transgression of the laws, while at the same time he ordered that "obstinacy" on the part of the Christians, i. e., a firm adherence to their profession, should be punished. Hadrian's rescript as preserved by Justin and Eusebius[22] reads thus:

"Hadrian to Minucius Fundanus.

"I have received a letter written to me by the illustrious Serenius Granianus, whom you have succeeded. I desire the matter not to be passed over without being examined into, so that these men may not be harassed nor opportunity of malicious proceedings be offered to informers. If, therefore, the people of the province can clearly and legally bring their charges against Christians so as to answer before the tribunal, let them take this course only, and not proceed by importunate demands and mere outcries. For it is better, if any bring an accusation and prove anything to have been done contrary to the laws, to determine them according to the nature of the crime;

[21] How little this emperor knew of Christianity is evident from a remark of his in a letter to his brother-in-law Servianus, that "worshipers of Serapis are Christians, and these are devoted to Serapis, who call themselves Christ's bishops." For the text of this letter see Preuschen, *loc. cit.*, p. 19.

[22] *Apol.*, I, 69; Eusebius, *Eccl. Hist.*, IV, 9.

but if the charge be only calumny, take care to punish the author of it as it deserves."[23]

Conscientious governors, says Uhlhorn, acted henceforth on this rescript. And yet Antoninus Pius had to issue new rescripts of like tenor. There arose in Greece a severe persecution in which Publius, the bishop of Athens, lost his life.[24] The Emperor sent rescripts to Larissa and to Thessalonica, in which he forbade the introduction of new measures in the treatment of the Christians, and ordered that the limits prescribed by Trajan's edict should be strictly observed. And in all probability this was generally done in the time of Antoninus Pius. But we will not anticipate.

In the reign of Hadrian, the Jews, led by the pseudo-Messiah Bar-Cochab, persecuted all the Christians who would not join them in the insurrection. The outcome of this rebellion need not be narrated. Unable to persecute any further, the Jews circulated horrible calumnies on Jesus and his followers. "You," says Justin,[25] addressing the Jews, "have sent chosen and ordained men throughout all the world to proclaim that a godless and lawless heresy has sprung from one Jesus, a Galilean deceiver, whom we crucified, but his disciples stole him by night from the tomb,[26] where he was laid when unfastened from the cross,

[23] The genuineness of this rescript has been doubted by different scholars who considered it to be a Christian fiction. Uhlhorn considers it genuine. Keim, *Rom und das Christentum*, pp. 552 f., thinks that this rescript was composed by a Christian of Asia Minor, between 140-150 A. D. Baur also looks upon it as a Christian invention.

[24] Eusebius, *loc. cit.*, IV, 23.

[25] Dialogue with Trypho, ch. 108, 133.

[26] Here we have the origin of what has been called the "theory of fraud" of the resurrection of Jesus. It was invented by the Jewish priests who crucified the Lord, and knew it to be false (Matt. xxvii. 62-66, xxviii. 12-15). The lie was repeated and believed, like many other lies, by credulous infidels, first by malignant Jews at the time of Justin Martyr, then by Celsus, who learned it from them, but wavered between it and the vision-theory, and it was renewed in the eighteenth century by Reimarus in the Wolfenbüttel Fragments. Strauss formerly defended the vision-theory, but at the close of his life, when he exchanged his idealism and pantheism for materialism and atheism, he seems to have relapsed into this disgraceful theory of fraud; for in his *Old*

and now deceive men by asserting that he has risen from the dead and ascended to heaven. Moreover, you accuse him of having taught those godless, lawless, and unholy doctrines which you mention to the condemnation of those who confess him to be the Christ, and a teacher from, and Son of, God."

In the reign of Hadrian the long succession of "apologies" took its rise, indicating a very bitter public sentiment against the Christians, and a critical condition of the church. The writers of these "apologies" known as "apologists" had not only to refute the charges and slanders of Jews and Gentiles, but they also endeavored to vindicate the truths of the Gospel, and attacked the vices and errors of idolatry.[27]

The reign of Antoninus Pius (138-161) was for the most part a time of peace and toleration. The only recorded martyrdom under his rule, in the very year of his accession, is that of Telephorus, bishop of Rome.[28] Otherwise the church was protected by the emperor.[29] About the tenth year of his reign Justin Martyr laid before Antoninus Pius his First Apology "in behalf of those of all nations who are now unjustly hated and wantonly abused; I myself," he adds, "being one of them." In reply to this treatise of Justin, a rescript is said to have been issued by the emperor to the Assembly of Asia* to the effect that "the Christians should not be molested unless they made attempts against the government."[30] But the gravest doubts

and New Faith (1873) he was not ashamed to call the resurrection of Christ "a world-historical *humbug*."

[27] See the next section.

[28] According to Uhlhorn he was martyred A. D. 135 or 137.

[29] According to Baur "the Christians suffered harsher oppressions than under Hadrian.

* κοινὸν τῆς Ἀσίας.

[30] Eusebius, IV, 13; Justin, *Apol.*, I, 70. In Eusebius it is an edict of Marcus Aurelius, although Eusebius says immediately before, chap. 12, that it was the emperor to whom Justin addressed his Apology, i. e., Antoninus Pius. Moreover, what Eusebius says at the end of chap. 13 of the confirmatory

have been raised respecting the authenticity of this document which we here give for the benefit of the student:

"I was of the opinion that the gods would take care that such people [the Christians] should not remain hidden, for they would punish much more, if they could, those who will not worship them. You torment them and accuse them as if they were atheists in their way of thinking, and you reproach them with other things which we cannot prove. It can only be advantageous to them if they are seen to die for that which is laid to their charge; when they prefer giving up their bodies to doing what you require of them, they conquer us. It is unkind to remind you of the earthquakes which have happened and still happen. Compared with the Christians you lose your courage in such circumstances; they have far more confidence in God than you. At such a time you appear to know nothing of the gods, you neglect the sacrifices, you do not know how to worship God, and therefore you are envious of those who worship him, and persecute them to death. Concerning these people some governors of provinces wrote to my divine father, and he replied to them that they should leave these people in peace if they do not attempt anything against the dominion of the Romans. And many have sent reports about them to me, and I also have answered in accordance with my father's opinion. If any one has a complaint to bring against any of these people as such [as a Christian] the accused person is to be discharged even if it is shown that he is what is said, but the accuser is to be punished."[31]

"Every word of this," says Baur," betrays the Christian writer, who makes the emperor give the heathens a lecture, while, with regard to the Christians, he speaks in exact accordance with the wishes of the Christians as to the way in which they would desire to be judged and dealt with by the Roman authorities. The emperor ends, in

testimony of the bishop Melito of Sardis cannt refer to this edict as an edict of Marcus Aurelius; for had Melito known of such a document he could not have omitted to mention it in his Apology; cf. Euseb. IV, 26. This accordingly can only refer to the missives to Larissa, etc. The alleged edict arose, no doubt, under Marcus Aurelius, but was imputed to Antoninus Pius, in order to increase its influence by giving it the authority of the earlier emperor (Baur).

[31] Scholars like Neander, Baur, Uhlhorn, Schaff reject this edict as spurious, though it is defended by Wieseler.

fact, with issuing commands exactly contrary to those of the edict of Trajan."

Marcus Aurelius (161-180), the philosophic moralist, the patron of the stoics, the pupil of Fronto of Cirta, an opponent of the Christians, on whom he charged incestuous banquets,[32] had no sympathy with Christianity, and probably regarded it as an absurd and fanatical superstition. His religion was a fatalistic pantheism. Nature was his God. "Everything harmonizes with me, which is harmonious to thee, O Universe! Nothing for me is too early or too late, which is in due time for thee. Everything is fruit to me which thy seasons bring, O Nature! From thee are all things, in thee are all things, to thee all things return." In proud resignation to the decisions of fate he sought his peace. "Willingly give thyself up to Clotho, allowing her to spin thy thread into whatever things she pleases." Marcus Aurelius believed that he could realize his moral ideal by his own power. He believed in himself and indeed in himself alone. "It is sufficient to attend to the *daimon* within, and to reverence him sincerely." A man who took this attitude could only reject the story of the cross, the gospel of grace for sinners. Marcus Aurelius,[33] says Uhlhorn, "was far too much of a slave to his philosophic theories, far too thoroughly steeped in the prejudices of the schools, to be able to give a hearing to the artless message of salvation. He was far too proud and cold to receive from the Christians' joy in their faith, any other impression than that of fanaticism. In his "Meditations"[34] he alludes only once to the Christians and this with scorn, tracing their whole enthusiasm for martyrdom to "sheer obstinacy" and love for theatrical display. "The soul,"

[32] He is referred to by Minucius Felix in the *Octavius*, ch. IX and XXXI.

[33] On Marcus Aurelius see Farrar, *Seekers After God*, pp. 235 ff.; Schaff, *History of the Christian Church*, II, p. 325 ff.

[34] English translation by Geo. Long, revised ed., London, 1880.

he says, "when it must depart from the body, should be ready to be extinguished, to be dispersed, or to subsist a while longer with the body. But this readiness must proceed from its own judgment, and not from mere obstinacy, as with the Christians; it must be arrived at with reflection and dignity, so that you could even convince another without declamation."[35] How far above the Christian martyrs, this emperor evidently thought himself! Of what led them to death, he had no conception. He can hardly have known more of Christianity than what was conveyed to him by hearsay, and what Fronto, his teacher and friend, may have told him of it.

It is significant for the position of Marcus Aurelius, that Fronto, the rhetorician, the author of the first controversial work directed against Christianity of which we have any knowledge,[36] was so intimate with him. During the first years of the reign of Marcus Aurelius the Christians' position remained the same as before. Trajan's regulations were still the standard for all proceedings against them, except that the many calamities which had come upon the Empire had excited the fanaticism of the heathen to greater fierceness, and the authorities offered less resistance to the demands of the people. A persecution flamed up with peculiar fury in Asia Minor, and in it Polycarp, the venerable bishop of Smyrna, suffered martyrdom. When asked to swear by the genius of the emperor, Polycarp answered: "Eighty and six years have I served Christ, and he has never done me a wrong. How can I blaspheme him, my King, who has saved me?" And having prayed: "Lord God Almighty, Father of our Lord Jesus Christ, I praise Thee that Thou hast judged me worthy of this day and of this hour, to participate in the number of Thy wit-

[35] Meditations, XI, 3.

[36] It was soon cast into the shade by the treatise of Celsus.

nesses and in the cup of Thy Christ," he was consumed by the flames. This took place April 6 A. D. 166.[87]

Another prominent martyr of this time was Justin Martyr. When he wrote his second Apology, he was already aware of what awaited him. He narrates the executions of several Christians, which had given the occasion for the Apology, and then adds: "I too expect to be taken in their snares and impaled." He knew, says Uhlhorn, that the philosopher Crescens longed to be revenged upon him and had daily before his eyes proofs of how easy it was to procure the death of a Christian. Crescens denounced him, and with several other Christians he was brought before Junius Rusticus, the prefect of the city. Justin quietly explained who he was, and what was his occupation, that he had himself sought and found the truth, and that now when any one came to him he communicated to him the teachings of the truth. "Art thou not then a Christian?" asked the prefect, and Justin replied: "Yes; I am a Christian." Together with others, Justin was beheaded with the axe.

But worse things were yet to come. The emperor had issued a rescript which went far beyond the regulations of Trajan. Melito of Sardis calls it barbarously cruel. "What has never before happened," writes Melito, "the race of the pious is now persecuted in Asia by new edicts. The shameless informers, greedy of the property of others, plunder, as they find in the edicts the occasion to do so, the innocent by day and night." Melito doubts whether a righteous emperor could ever ordain anything so unjust, but says that if this decree and this new edict, which should not have been passed as it is even against hostile barbarians, does proceed from the emperor himself, they entreat him the more earnestly not to give them up to be thus pub-

[87] There is a difference of opinion among scholars as to the date of Polycarp's martyrdom. Schaff, Renan, Ewald, Lipsius, Zalm, Harnack and others assign it to the reign of Antoninus Pius in 155. Wieseler, Keim, Uhlhorn and others favor the old date (166-167), which rests on the authority of Eusebius and Jerome.

licly plundered.[38] This is just the period of the first great Christian persecutions which were conducted by the Roman state authorities. The first fell upon the church at Smyrna in the year 167, the second ten years afterwards upon the Gallic churches at Lugdunum and Vienna. The most distinguished victim of this Gallic persecution was Pothinus, the bishop of Lyons, a man over ninety years old.[39]

The persecution extended throughout the entire empire, an early prelude of the subsequent general persecutions. "The demon [of the Christians]," Celsus exultingly asserts, "is not only reviled, but banished from every land and sea, and those who, like images, are consecrated to him are bound and led to punishment and impaled (or crucified), whilst the demon—or, as you call him, the Son of God— takes no vengeance on the evil doer." Celsus saw in this the fulfilment of the saying of Apollo's priest: "The mills of the gods grind slowly," and he scornfully points to the fate of the worshipers of the one God. "They [the Jews] instead of being masters of the whole world, are left with not so much as a patch of ground or a hearth; and of you [the Christians] one or two may be wandering in secret, but they are being sought out to be punished with death."[40] But in all his exultation at the destruction of the Christians, Celsus must still have felt that this persecution had not exterminated them, and would not do so. Otherwise why did he choose just this time to make a written attack on them? For, in all probability, the famous, or rather infamous, treatise which he published under the title "A True Discourse," belongs to this very time.

THE APOLOGISTS.

From the beginning Christianity bore within itself the consciousness of possessing a power which should over-

[38] Eusebius, IV, 26.

[39] For the narrative of this fiery trial see Eusebius, V, 1, 2.

[40] Origen against Celsus, VIII, 39, 40, 69.

come the world. The words of Jesus, "Ye are the salt of the earth," "ye are the light of the world," were the guiding thought by which the Christians were inspired from the beginning, and which made them conscious that they were the soul of the world, and that they alone had a future to look forward to. Where there are men who in this way feel themselves to be the soul of the world, the time is indisputably approaching when the reins of the government of the world will fall unasked into their hands.

But before things had advanced so far, much repugnance, detestation, hatred and enmity against Christianity had to be overcome. But still it was successful, though all that it had to oppose to the whole might of heathenism, was simply the word, the testimony of Christ. To this must be added the life, love and suffering of the early Christians, which made an impression upon the heathen, and thus many a soul among them thirsting for truth, many a seeker after wisdom in the schools of the philosophers, in the temples of gods the most diverse, or in Jewish houses of prayer, found here the deepest longing satisfied. The time had come when not only—to use the words of Celsus —"wool-workers, cobblers, leather-dressers, the most illiterate and vulgar of mankind, were zealous preachers of the gospels," but also the cultured and learned, and from the ranks of the latter came those men who wrote treatises or apologies in defence of the new religion, to which they have been converted, and from their writings they obtained the name of "apologists." The Christian apologetic literature called forth in the second century, was a "vindication of Christianity by the pen, against the Jewish zealot, the Grecian philosopher, and the Roman statesman. The Christians were indeed from the first 'ready always to give an answer to every man that asked them a reason of the hope that was in them.' But when heathenism took the field against them not only with fire and sword, but with argu-

ment and slander besides, they had to add to their simple practical testimony a theoretical self-defence" (Schaff).

The earliest of these apologists[1] are Quadratus and Aristides, who wrote against the heathen, and Aristo of Pella, who wrote against the Jews, all in the reign of Hadrian (117-137). As to Quadratus, his "Apology" is lost. All we know of him is a quotation from Eusebius who says: "Quadratus addressed a discourse to Aelius Hadrian, as an apology for the religion that we profess, because certain malicious persons attempted to harass our brethren." As to Aristides of Athens, his "Apology" mentioned by Eusebius, was looked upon as hopelessly lost, but has recently been recovered. The apology contains "first, a declaration of the nature of the true God; then a scathing exposure, by way of contrast, of heathen mythological systems; and lastly, a vivid and beautiful delineation of the Christian character, with an appeal to calumniators and persecutors, drawn from the coming judgment." Some scholars think that the original was offered to the emperor Antoninus Pius (138-161).

Aristo of Pella seems to have been the earliest Christian participant in the literary conflict with Judaism. Between 135 and 175 he published a small treatise entitled "A Disputation between Jason and Papiscus concerning Christ." In this work Jason, a Jewish Christian, proved so conclusively the fulfilment of the Messianic prophecies in Jesus of Nazareth that his opponent, the Jew Papiscus, begged to be baptized. Celsus cites the work in his treatise against the Christians, written about 178.

Justin the Philosopher and Martyr.

"The most eminent among the Greek apologists of the second century is Flavius Justinus, surnamed 'Philosopher

[1] On these and the other apologists see Ehrhard, *Die altchristliche Litteratur*, vol. I, 1900, pp. 198 f.; Bardenhewer, *Patrology*, St. Louis, Mo., 1908, pp. 44 ff.; also Schaff, *History of the Christian Church*, vol. II, 1883.

and Martyr.' He is the typical apologist, who devoted his whole life to the defence of Christianity at a time when it was most assailed, and he sealed his testimony with his blood. He is also the first Christian philosopher or the first philosophic theologian. His writings were well known to Irenæus, Hippolytus, Eusebius, Epiphanius, Jerome and Photius, and the most important of them have been preserved to this day" (Schaff). He was one of those seekers after truth who found his deepest longing satisfied in the church. He tells us of his fruitless wanderings through the school of the philosophers in search of certainty and peace of mind. A stoic under whose instruction he first placed himself, asserted that the sure knowledge of God, which Justin chiefly longed for was a subordinate question of philosophical speculation. A peripatetic, of whom he next inquired, demanded, after a few days, as of primary importance, that he should settle the fee. This repelled Justin, and he went to a Pythagorean who dismissed him immediately because he had no knowledge of music, geometry and astronomy, an acquaintance with which, the Pythagorean declared, was pre-requisite to the study of philosophy, since they are the means by which the soul absorbed in earthly things may be purified. Justin then turned to a Platonist and supposed that he had reached the goal, for his teacher introduced him to the Platonic doctrine of ideas, and the pupil already dreamed that he had become a sage and was near to the vision of Deity. Then, walking alone one day on the shore of the sea, he met an old man, a mature Christian, and fell into conversation with him on divine things. The venerable man showed him that God can be perceived only by a mind sanctified by the spirit of God, and so affected him that all at once his proud dream of knowledge vanished. The old man, seeing his consternation, pointed him to the divine Word as the source of all true knowledge of God, and began to tell him of Christ.

Following these hints, Justin found in Christianity that sure knowledge of God which he had sought for in vain in the different schools of philosophers. Thus the enthusiastic Platonist became a believing Christian.[2]

Justin is the author of two "Apologies" against the heathen, and of a "Dialogue with Trypho the Jew." The "First Apology," which is the longer, is addressed to the emperor Antoninus Pius (137-161), and is especially valuable for the account it gives of the doctrines, ritual, and life of the early churches.[3] It vindicates the Christians from the charge of atheism and immorality. "We who formerly delighted in fornication," says he, "now strive for purity. We who used magical arts, have dedicated ourselves to the good and eternal God. We who have loved the acquisition of wealth more than all else, now bring what we have into a common stock, and give to every one in need. We who hated and destroyed one another, and on account of their different manners would not receive into our houses men of a different tribe, now, since the coming of Christ, live familiarly with them. We pray for our enemies, we endeavor to persuade those who hate us unjustly to live conformably to the beautiful precepts of Christ to the end that they may become partakers with us of the same joyful hope of a reward from God, the Ruler of all."[4]

The "Second Apology" is chiefly an appeal against the calumnies of the cynic philosopher Crescens, and the consequent persecution to which Christians were exposed. In both apologies Justin shows how large a place was occupied in his thoughts by the "demons," as the deceivers of man-

[2] Justin Martyr, Dialogues, ch. II, 8. Archbishop Trench has reproduced the story of Justin's conversion in thoughtful poetry, in *Poems*, London, 1865, p. 140.

[3] For a description of a Sunday service see ch. 65, 67.

[4] ch. 63.

kind. The second was fatal to Justin himself, Crescens in revenge pursuing the Christian philosopher to his death.

The "Dialogue with Trypho the Jew" is a work of Platonic cast. It is here that Justin gives the well-known narrative of his own conversion. It is more than twice as large as both "Apologies," and is a vindication of Christianity from Moses and the prophets against the objections of the Jews. The disputation lasted two days. Trypho was not a fanatical Pharisee but a tolerant and courteous Jew, who evasively confessed at last that he had been much instructed, and asked Justin to come again, and to remember him as a friend.

Tatian the Assyrian.

This disciple of Justin Martyr, living from 110 to 172 A.D., was the author of an apologetic work addressed "To the Greeks" and written in the reign of Marcus Aurelius, probably in Rome. He vindicates Christianity as the "philosophy of the barbarians," and exposes the contradictions, absurdities, and immoralities of the Greek mythology from actual knowledge and with much spirit and acuteness, but with vehement contempt and bitterness. He proves that the teachings of Moses and the Old Testament comprise an older as well as a purer doctrine. All that was true, he maintains, in ancient philosophy, was derived from "barbarians" to whom God revealed Himself.

Miltiades.

Miltiades was a contemporary of Tatian and perhaps also a disciple of Justin. He defended the Christian truth against pagans, Jews and heretics, but all his writings are lost.

Apollinaris.

Claudius Apollinaris was bishop of Hieropolis in the reign of Marcus Aurelius, to whom he presented a "De-

fence of the Christian Faith," apparently in 172. But this as well as his other writings have perished.

Melito.

Melito, bishop of Sardis in Lydia, was a prolific author. He wrote an "Apology," which he presented to Marcus Aurelius. In it Melito reminds the emperor and the Romans that the appearance of Christianity in the world was contemporary with the reign of Emperor Augustus, which was so great an epoch in history. At that time, he says, the Roman Empire reached the highest point of its prosperity, and since then both have been together in the world to their mutual advantage. "The philosophy which we profess," says Melito, "first flourished indeed among the barbarians, but afterwards, when it grew up also among the nations under your government, under the glorious reign of Augustus, your ancestor, it became to your administration an auspicious blessing. For since that time the Roman power has grown in greatness and splendor, and to it you have become the desired successor; and will continue to be, together with your son, if you preserve that philosophy which has been nurtured with the empire, which commenced its existence with Augustus, and which your ancestors also did honor with other religions. One of the greatest evidences that our doctrine flourished to the advantage of a reign so happily begun, is this, that nothing disastrous has occurred to the empire, since the reign of Augustus; on the contrary, all things have proceeded splendidly and gloriously according to the wishes of all."[5]

Athenagoras.

He was "a Christian philosopher of Athens," during the reign of Marcus Aurelius. He addressed an "Apology" or "Intercession in behalf of the Christians" to the em-

[5] Eusebius, IV, 26.

perors Marcus Aurelius and Commodus. In a style of great elegance, Athenagoras meets and refutes the current accusations against the Christians, those of atheism, Thyestean banquets (cannibalism), Oedipodean connections (incest), and effectually retorts the charge of absurdity upon the traditions of heathenism.

Minucius Felix.

Marcus Minucius Felix belongs to that class of converts who brought the rich stores of classical culture to the service of Christianity. We have from him an apology of Christianity in the form of a dialogue under the title *Octavius*. Together with his friend Octavius Januarius, who like himself had been converted from heathen error to the Christian truth, the author makes an excursion from Rome to the sea-bath at Ostia. There they meet on a promenade along the beach with Cæcilius Natalis, another friend of Minucius, but still a heathen, and, as appears from his reasoning, a philosopher of the skeptical school of the New Academy. Sitting down, the two friends begin, at the suggestion of Cæcilius, to discuss the religious question of the day. Minucius sitting between them is to act as umpire (chap. 1-4).

Cæcilius speaks first in defence of the heathen, and in opposition to the Christian religion. "He represents in his views," says Uhlhorn, "a class of persons, large then as always, who have a certain measure of culture and yet are incapable of any profound knowledge, and touch the subject of religion only on the surface. Conservative in their disposition, they adhere to the faith in which they are born neither from choice nor from inclination, but from decorum and love of quiet. They regard it as a mark of good breeding not to dispute much upon such a topic. They are neither dreamers nor mystics. On the contrary they are somewhat skeptical, and rather inclined to ridicule religious

beliefs. Yet they are unwilling to see the old traditions disturbed, are easily inflamed against religious innovaters, and are credulous of every absurdity which is reported about them.

Nothing in Christianity more excites the anger of Cæcilius than its claim to be in possession of assured truth. While he admits that we know nothing with certainty, yet he thinks "the tradition of the fathers the most venerable and the best guide to truth" (ch. 5). Wherefore the religion which they have handed down is to be followed, without dispute. The depressed condition of the Christians makes him ridicule their God. "Where is the God," asks Cæcilius, "that can help those who come to life again, while he does nothing for the living? Do not the Romans govern and reign without your God? Do they not enjoy the whole world and rule over you? The greatest and best portion of you are the prey of want and cold, are naked and hungry. Your God suffers this and seems not to know it. Either he can not, or will not, help his own: thus he is either weak or unjust" (ch. 12). Cæcilius objects to the religion of the Christians, that it has no temples, nor altars, nor images. "What absurdities," exclaims he (ch. 10), "do these Christians invent! Of the God whom they can neither show nor see they recount that he is everywhere present, that he comes and goes, that he knows and judges the actions of men, their words, and even their secret thoughts. They make him out to be a spy, a troublesome policeman, who is always in motion. How can he attend to every particular when he is occupied with the whole? Or, how can he be sufficient for the whole, when he is engaged with particulars?" (ch. 10).

In the eyes of Cæcilius the Christians appeared to be godless, to be atheists. But more than this. He repeats the lies of secret crimes, as promiscuous incest and the murder of innocent children, and quotes as authority for

these slanders the celebrated orator Fronto. "The story about the initiation of novices," Cæcilius narrates, "is as much to be detested as it is well known. An infant covered over with meal, that it may deceive the unwary, is placed before the neophytes. This infant is slain by the young pupil, with dark and secret wounds, he being urged on as if to harmless blows on the surface of the meal. Thirstily —O horror!—they lick up its blood; eagerly they divide its limbs; by this victim they are pledged together; with this consciousness of wickedness they are covenanted to mutual silence." After the feast, it is further related, when they are intoxicated, a dog that has been tied to the chandelier is provoked to jump by throwing a morsel, so that by the leap he extinguishes the light, and in the darkness thus occasioned deeds of the most abominable lust are committed and the wildest orgies are celebrated (ch. 9).

To the pagan Cæcilius, the Christians are a "reprobate, unlawful, desperate faction," who had conspired against all that is good and beautiful, a "people skulking and shunning the light, silent in public, but garrulous in corners. They despise the temples as charnel-houses, they abhor the gods, they laugh at sacred things; wretched, they pity, if they are allowed, the priests; half naked themselves, they disdain honors and purple robes. In their wondrous folly and incredible audacity they despise present torments, though they dread those which are uncertain and future; and, while they fear to die after death, they do not fear to die for the present. So does a deceitful hope, the consolation of a revival, soothe their fear" (ch. 8). Cæcilius pities the Christians for their austere habits and their aversion to the theater, banquets and other innocent enjoyments (ch. 12).

Octavius follows closely the arguments of Cæcilius, makes a drastic exposé of the follies of polytheism and refutes the usual anti-Christian calumnies, closing with a

touching portrait of the faith and life of the Christians (ch. 16-38). No arbiter's judgment is needed as Cæcilius admits his defeat.

The Epistle to Diognetus.

We have spoken of the consciousness which filled the Christians that they are the soul of the world. Among the apologists of the second century there is no one in whom this feeling was more alive, or by whom it was expressed with greater energy and beauty than the unknown author of the "Epistle to Diognetus." After depicting in sharp antitheses the peculiar enigmatical life of the Christians, contrasting in so many points with the whole of their surroundings, he sums up his description of them in the statement: "In a word, the Christians are in the world what the soul is in the body." As the passage is too beautiful to omit we give it in full: "The Christians are not distinguished from other men by country, by language, nor by civil institutions, for they neither dwell in cities by themselves, nor use a peculiar tongue, nor lead a singular mode of life. They dwell in Grecian or barbarian cities, as the case may be; they follow the ways of the country in dress, food, and the other affairs of life. Yet they present a wonderful and confessedly paradoxical course of conduct. They dwell in their own native lands, but as strangers. They take part in all things as citizens; and they suffer all things as foreigners. Every foreign country is a fatherland to them, and every land of their birth as a land of strangers. They marry, as do others; they beget children; but they do not destroy their offspring. They have a common table, but not a common bed. They are in the flesh, but they do not live after the flesh. They pass their days on earth, but they are citizens of heaven. They obey the prescribed laws, and at the same time surpass the laws by their lives. They love all men, and are persecuted

by all. They are unknown and condemned; they are put to death, and restored to life. They are poor, yet make many rich; they are in lack of all things, and yet abound in all; they are dishonored, and yet in their very dishonor are glorified. They are spoken evil of, and yet are justified; they are reviled, and bless; they are insulted, and repay the insult with honor; they do good, yet are punished as evil-doers. When punished, they rejoice as if quickened into life; they are assailed by the Jews as foreigners, and are persecuted by the Greeks; yet those who hate them are unable to assign any reason for their hatred.

"To sum up all in one word—what the soul is in the body, that are Christians in the world. The soul is diffused through all the members of the body and Christians are scattered through all the cities of the world. The soul dwells in the body, yet is not of the body; and so the Christians dwell in the world, yet are not of the world. The soul, invisible, keeps watch in the visible body; so also the Christians are known indeed to be in the world, but their godliness remains invisible. The flesh hates the soul, and wars against it, though itself suffering no injury, because it is prevented from enjoying pleasures; the world also hates the Christians, though in nowise injured, because they abjure pleasures. The soul loves the flesh that hates it, and [loves also] the members; Christians likewise love those that hate them. The soul is imprisoned in the body, yet preserves that very body; so the Christians are confined in the world as in a prison, and yet they are the preservers of the world. The immortal soul dwells in a mortal tabernacle; so the Christians dwell as sojourners in corruptible [bodies], looking for an incorruptible dwelling in the heavens. The soul, when but ill-provided with food and drink, becomes better; in like manner, the Christians, though subjected day by day to punishment, increase the more in number. God has assigned them this illustrious

position, which it were unlawful for them to forsake" (ch. 5 and 6).[6]

Leaving aside the question of authorship which remains unanswered to this day, we will state that the Diognetus to whom this letter is addressed, was an inquiring heathen of high social position and culture, who desired information concerning the origin and nature of the religion of the Christians, and the secret of their contempt of the world, their courage in death, their brotherly love, and the reason of the late origin of this new fashion, so different from the gods of the Greeks and the superstition of the Jews. A stoic philosopher of this name instructed Marcus Aurelius. Perhaps he taught him also to despise the Christian martyrs, and to trace their heroic courage to sheer obstinacy. It is quite probable that our Diognetus was identical with the imperial tutor who expressed the desire to know what enabled these Christians "to despise the world and to make light of death."[7]

The epistle is an answer to the question of this noble heathen. "It is a brief but masterly vindication of Christian life and doctrine from actual experience. It is evidently the product of a man of genius, fine taste and classical culture. It excels in fresh enthusiasm of faith, richness of thought, and elegance of style, and is altogether one of the most beautiful memorials of Christian antiquity, unsurpassed and hardly equaled by any genuine work of the Apostolic Fathers."

Assuming with Lightfoot, Schaff and Bardenhewer the identity of the recipient of this epistle with that of the preceptor of Marcus Aurelius; assuming with Keim the year 177 as the date of composition, may we not go a step

[6] The only codex of this epistle definitely known was the Strassburg Codex of the thirteenth century, which was destroyed in the accidental fire at Strassburg during the siege of 1870,

[7] Comp. *Ep. and Diog.*, cap. 1, with Aurelius, *Medit.*, IX, 3 (his only allusion to Christianity).

further and assume that the work of Celsus was meant to counteract the influence which the "Epistle to Diognetus" might produce? The very title of Celsus's work, "A True Word," is in itself suggestive. He alone claims to give a "true" discourse. "I know all. We have it all out of your own books, we need no further witnesses. You have killed yourselves with your own sword;"[8] such is the boast of Celsus, the Platonist.

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[8] Origen, *Against Celsus*, I, 12; II, 74.

FROM PROTAGORAS TO WILLIAM JAMES.

NOW that the big heart is still and the voice of the Master is silent—the Master who since the death of the great Socrates himself is unsurpassed in the philosophic inspiration he imparted to the youth of his age—friendship and justice alike require that we shall give such nurture and correction to his favorite child as loyalty to the past and the needs of the future may dictate. Let us try to examine briefly the significance of the doctrine of pragmatism and then redefine it in terms of our own insight.

I.

It is a long stretch historically from Protagoras to William James. Yet critics have not been slow in pointing out the similarity between the doctrine of the founder of ancient humanism and the pragmatic movement of today. In this the critics have spoken truer than they knew. For historical research has now made clear that Protagoras was no subjectivist, as was so long supposed from a misinterpretation of Plato, but a genuine empiricist. I agree in the main with Gomperz's results in his treatment of Protagoras.[1] But I believe that these results, with proper interpretation, can be derived from Plato, especially the Theaetetus, which Gomperz discards. This incidentally throws valuable light on the Protagorean authorship of the anonymous work entitled "The Art." On the basis of this new interpretation of Protagoras, we may indeed adopt the first sentence of Protagoras's work on truth as a fair

[1] *Greek Thinkers*, Vol. I, 438-475.

epitome of modern pragmatism: "Man is the measure of all things, of those which are that they are and of those which are not that they are not." Or to use Goethe's paraphrase: "We may watch nature, measure her, reckon her, weigh her, etc. as we will. It is yet but our measure and weight, since man is the measure of things."

It is a commonplace now that human nature must be the starting point for all our theories concerning reality. We can only speak of those things as existent that make a difference to human nature, either directly as immediate experience or indirectly as assumptions needed to account for such immediate experience as our perception with its microscopes and telescopes furnishes us. If things make no difference directly or indirectly, perceptually or conceptually, to human nature, they are mere fictions, belong in a world of centaurs and mermaids. At any rate we cannot say whether they are or are not.

And what is true in regard to the *existence* of things holds equally in regard to their *properties* and *values*. These, too, must be regarded as included in Protagoras's thesis, for the doctrine of the functional relation of qualities and values to human nature is distinctly attributed to Protagoras in the dialogue by that name. The doctrine of the relativity of values Protagoras inherited from Heraclitus, who showed that values depend upon the relation of the object to the specific will, whether that of ass, or ox, or fish, or hog, or surgeon. "Asses would rather have straw than gold.[2]" Relativity of values to the will does not mean subjectivity of values. We can predict values for definite wills. We know what the ox and ass want, under definite conditions. We must judge the values and properties of things, as well as their existence, from the differences they make to human nature in varying contexts. Things are colored, extended, sweet or bitter; they are

[2] See Fragments 51-58, Burnet, *Early Greek Philosophers*, p. 137.

pleasant or unpleasant, beautiful or ugly, because they belong in a context with conscious human nature. Things or individuals have those properties that we must acknowledge in order to adjust ourselves to our environment or realize our purposes. To speak of a property that makes no difference directly or indirectly to human nature, is to mistake fancy for reality. There is no property in the abstract, no good in general. In this Socrates and Protagoras agree.

So far modern pragmatism and Protagoras are at one. They are at one, too, in applying this criterion to all types of existence, physical or psychological, natural or supernatural. Knowledge everywhere must be based upon evidence as furnished through human experience. "In respect to the gods," says Protagoras, "I am unable to know either that they are or that they are not, for there are many obstacles to such knowledge, above all the obscurity of the matter and the life of man, in that it is so short." We must know the existence and properties of the supernatural as we know nature—by evidence. To be sure, in our conception of experience as race experience we are able to eke out somewhat further the evidence that Protagoras found insufficient in individual experience. Individual experience is supplemented by further historic experience in trying out the hypothesis. But human nature still remains the measure.

We know, too, that what differences shall exist for us vary vastly with the efficiency of our tools, perceptual and conceptual. The rings of Saturn or the properties of radium only make a difference to human nature with improved tools, not only in the way of telescopes and microscopes, but in the way of scientific conceptions. Considering the limitations of our powers of perception as compared with the complexity of the objects, this leaves sufficient room for scientific agnosticism. This agnosticism, how-

ever, is one of degree, not of kind. To the extent that we know the properties of things, we must believe that they are such as we must take them. To say, then, that all we know must be known from the difference it makes to human experience must be accepted as an evident, even if tautological, truism. Tautology it seemed even to Aristotle. But, if it is logical tautology, it marks, both in ancient and modern times, decidedly a new psychological step in the development of human consciousness, a step so striking that its recent re-discovery has been well-nigh epoch-making.

II.

But, if human nature is to be taken as the starting point and measure, we must first of all define human nature. Here again the problem is old, and we must strive to learn from the past. Not to orient ourselves with reference to the past is to talk like drunken men or men suddenly awake. A great deal of confusion and misunderstanding could have been obviated in the recent pragmatic discussion and a great deal of energy economized on both sides, if those taking part in it had taken pains to read Plato's Theaetetus.

If things exist and are what they are because of the differences they make to human nature, then what is human nature or in what respect must they make a difference?

goras in setting the new program, so revolutionary
ic investigation, failed, so far as we know, to
nature. This failure has probably a twofold
t is the inadequacy of his psychological tools.
perception were not as yet clearly differen-
we can see from the fragments of Empedocles.
nd perception here alike depend upon effluences
of like upon like. The concept has not yet
This is the immortal contribution of Soc-
It is this lack of distinction that Plato

feels when he says in the Theaetetus that "perception and sight and knowledge are supposed to be the same."

But another, and still more significant reason, we find in the problem which Protagoras sets himself. We learn from Porphyry that Protagoras in his great work on "Truth" directed his shafts against the Eleatics.[3] In other words, the bitter struggle of Protagoras, as of his modern successors, was with the intellectualists. Only the Eleatics were no milk and water intellectualists. They had the courage of their convictions. In Parmenides, the venerable founder of the school, they had their unequivocal platform: "For it is the same thing that can be thought and that can be." Thought coerces being. Zeno had riddled the world of perception with his brilliant dialectic, and Melissos had drawn the consequences of the logic of his predecessors: "Wherefore it ensueth that we neither see nor know the many." It was this arrogant confidence in *a priori* thought and contempt for sense that Protagoras set himself to refute.

We cannot wonder, then, that Protagoras seemed to his critics to neglect thought and to place a one-sided emphasis upon the immediate. Here again history has repeated itself. But it seems less of an omission when we remember that there was no need of emphasizing the importance of thought so far as the Eleatic intellectualists were concerned. Knowledge, Protagoras insists, must proceed from evidence. It cannot be produced *in vacuo* by means of mere logical consistency. The criterion of reality must lie in the consequences in the way of immediate sense experience. Knowledge rests, in the last analysis, upon perception.

For, with the key furnished by Porphyry, we can see the import of the quotations given by Plato in the Theaetetus. The *homo mensura* tenet, which Plato quotes, means

[3] Gomperz, *Greek Thinkers*, Vol. I, p. 450.

that if facts make a sensible difference to human nature, they must be existent, and must be what they seem to be, for the non-existent cannot make any difference to human nature. And again we read: "As Protagoras says: 'To myself I am judge of what is and what is not to me' "—the most unsophisticated can trust his senses. No need of an Eleatic to tell us. And finally: "His words are: 'To whom a thing *seems,* that which *seems* is';" or, in Hegel's phrase, "The essence must appear." Unless the real can appear in experience and be taken at its face value, not as a lying universe, science is impossible. And in this appearance, so far as knowledge is concerned, human nature is a necessary reagent. Such seems to me the meaning of Protagoras. Such is the meaning of modern pragmatism.

Perhaps the best commentary on Protagoras is his own countryman and contemporary, Empedocles, who, with a similar motive, was combating the Eleatics: "Go to now, consider with all thy powers in what way each thing is clear. Hold nothing that thou seest in greater credit than what thou hearest, nor value thy resounding ear above the clear instructions of thy tongue; and do not withhold thy confidence in any of the other bodily parts by which there is an opening for understanding, but consider everything in the way it is clear."[4] Thus must we put nature upon the rack. This is Empedocles's plea for sense evidence; and his belief in the dependence of this sense evidence, both as to kind and to range, upon the conditions of the human body—its substances and pores, did not make him a subjectivist.

Plato's interest, in the Theaetetus, is not in Protagoras's own meaning, but in the psychological and logical consequences which seem to him to be involved—quite unsuspected, as he admits, by Protagoras himself and his disciples. Thus Plato hopes to point a moral to the sub-

[4] Lines 20-24, Burnet's translation.

jectivism in his own day. To make short work of his opponents, Plato groups together several doctrines, the *homo mensura* doctrine of Protagoras, the later doctrine of Theaetetus that knowledge is perception, and the flux theory of the later Heracliteans, all of which Plato gives the brand of relativism, thus producing confusion in the mind of his successors. And here too history has repeated itself in the hopeless jungle of doctrines to which the term pragmatism has been applied by its critics.

Plato's interpretation of human nature, when he sets himself to "understand" Protagoras is surprisingly individualistic. "Man" must mean "men." He then proceeds to draw the consequences of such an individualistic interpretation. Protagoras, like the early Fichte, had failed to define his ego. He had not been forced like Kant, through a long discussion, to have recourse to "consciousness in general." It was simply natural for him, coming before the individualistic period, and with the spirit of the natural scientists still upon him, to assume human nature to be one: or, as we learn from the dialogue "Protagoras," to regard man as primarily institutional.

But man as man does not have perceptions. So Plato argues. Seeming must always be individual seeming. So many men, so many seemings. If that is the case, the truth of the seeming is not guaranteed by the individual seemings, whether of man or of tadpole, but is the result of a constitution presupposed in the seemings and only to be arrived at by conceptual construction.

If Protagoras failed to define man, he also failed, according to Plato, to define seeming. Scrutiny will show that not all immediate experience is to be equally trusted or to be regarded as equally valid. There are illusions of perception. Immediate perception, therefore, cannot be trusted indiscriminately as evidence of reality. So Plato makes the later relativism do service against the common

sense theory of Protagoras. But pathological cases should not make us discredit perception altogether. In thinking, too, we have error—fallacious and insane thinking. But should we, therefore, discredit all thinking? Plato by his brilliant undiscriminating criticism of perception paves the way for skepticism altogether. While illusions mean a wrong assimilation of a present sense quality with a complex of sense qualities as experienced in the past, this does not prove that we have any other way of ascertaining the conjunctions of qualities except by sense-experience. Seeming must here correct seeming, through further experience. Thought can only furnish a systematic method of procedure, not the actual conjunctions.

Memory and expectancy, Plato further contends, point to a constitution which cannot be expressed in terms of immediate seeming. Insofar as we imply these, we have transcended mere perception. But while this is true, are not memory and expectancy after all built upon seeming—the reoccurrence of an identical content which suggests its own previous context? And does not the value of memory lie in enabling us to draw upon the conjunctions of past seemings in order to meet future seemings?

If you take our feelings of value instead of our perceptions, here too, Plato argues, we cannot speak of measure or validity, so long as we remain on the plain of mere immediacy. A dog-faced baboon has the same claim as Protagoras so far as immediate feelings are concerned. But we must not forget that the rôle of thinking must lie in finding and weighing the implied presuppositions in our immediate sense of values; and that all it can give us, here too, is systematic procedure. It does not create its data in the case of value any more than in the case of sense qualities.

Thus Plato argues in his own matchless and onesided way, that on the plain of immediacy there can be no ques-

tion of truth or falsity. As seemings they equally exist. The problem of validity arises only with conceptual definition, systematic thinking. He must be a wise man that is to be the measure. Truth cannot be decided on the ground of seeming or duration, but on the ground of its rational coherency. If Plato shows at the end of the Theaetetus that his abstract definition of truth is circular, this confession of logical failure is inevitable, on the intellectualist basis, i. e., so long as we try to define truth in strictly formal terms. The difficulty can only be overcome when we state truth pragmatically, that is to say, in terms of procedure or leading.

The individualism, which Plato falls into in criticizing Protagoras, would make all knowledge impossible. It can be turned against thought as well as perception. Thinking, as well as perception, must be the reaction of individual human nature. The individual errs in inference as well as perceptual judgment. Individual thinking must be corrected, as must illusory perception, in the course of future experience, individual and social. In our finite experience, knowledge is a piecemeal affair and seeming must correct and supplement seeming. Absolute truth is for us a limit. Our faith must be a faith in the leading of the seemings, even though we never should arrive. Plato, in his new enthusiasm, exaggerated the concept, as much as Protagoras exaggerated perception. The concept is a splendid tool, but its value lies in its anticipation of reality as sensed and felt, as concrete and individual. Plato, the absolutist, by failing to recognize this fact plays into the hands of the skeptic.

Plato sometimes narrowly escapes giving us the whole truth. In the Symposium and Phaedrus he arrives at the concept of beauty by discovering the common beauty in many instances, "going from one to two and from two to all fair forms, and from fair forms to fair actions, from fair actions to fair notions, until from fair notions he ar

rives at the notion of absolute beauty, and at last knows what the essence of beauty is." In other places he employs the method of limits; and again that of mystical appreciation. But the beauties of earth, the immediate facts, are only stepping-stones, the first rungs of the Jacob's ladder which, once ascended, the soul is satisfied and does not need to redescend to test the concept with reference to the facts? Even when it is forced to redescend, as in the case of rulers serving apprenticeship in the world of shadows, it is only to mark the deviations from the Idea, not to verify it. At least such seems Plato's attitude in the Republic, Symposium and the Phaedo.

What misled Plato, apart from his poetic bent of mind, was his passionate interest in one group of concepts, viz., the normative concepts, which he confused with the class concepts which he also regarded as Ideas. In the case of the normative ideals or limits, it does seem as though they must be primarily *a priori*—only elicited by the midwife experience. For without our ideal demands or instincts for meaning and beauty, we would not seek for meaning, for unity, or for order within the chaotic world of the immediate. This formal interest came to dominate largely the ancient world through the influence of Plato and the new ethical and religious spirit of the age.

In Protagoras and Plato we have the two poles of the problem of knowledge. It is the merit of Protagoras to have shown that there can be no knowledge without the evidence of immediate experience. What seems must be, or science is impossible. It is the merit of Plato to have shown that there can be no knowledge without systematic thinking. Without concepts sensation is blind. Protagoras may have over-emphasized the place of sense perception in investigation. Plato slighted the perpetual data and was inclined to let the mill of reason grind *in vacuo*. Each developed his brilliant half-truth as a corrective to

the prevailing tendency of the age, Protagoras in opposition to the apriorism of the Eleatics, Plato against the immediatism of Aristippus. If they did not emphasize the other side it was for the reason that it is not necessary to carry coals to Newcastle. By such zig-zag the history of thought progresses.

III.

It remained for modern science, in its brilliant history, to show the importance of both hypothesis and immediacy. Data become science only when illuminated by thinking or hypothesis. Science is the constructive or systematic functioning of human nature, not mere perceptual continuity with its environment. It is the purpose of science to construct or build out, on the basis of past experience, a conceptual net-work or differentiation of purposes to meet the variety of properties and changes in the environment. The equivalents furnished by our scientific system may be artificial enough, tools merely for our anticipation and mastery of the processes, as in the physical sciences; or they may be of a piece with the world with which they deal and lead to understanding and appreciation, as in social relations; but in any case our ideal construction must be verified with reference to the ongoing of experience.

To be sure this building out of immediacy has been recognized in natural science primarily. And here we have lagged behind the Greeks. The immediacy of perception, bound up with the specific energies of the senses, is the only immediacy adequately taken account of by modern science. The other type of immediacy, that of feeling and will-attitudes, involving physiologically, beside the specific cerebral tendencies, the more diffuse changes of the motor, sympathetic and vascular systems, has been largely ignored. Yet the *values* of objects must be regarded as

equally significant with their properties. If the sense qualities are functional relations of human nature to its objects, so also are values. Objects no more have qualities in the abstract than values, and by value I mean the satisfaction which objects can furnish to our will as contrasted with the sense differences which they can make. If the world of properties is capable of being taken in an orderly way, so also is the world of values. And the later Sophists were quite right in saying that if one is subjective, so is the other. What we must recognize is that if, by means of hypothesis and experiment, we can build out the immediacy of sense qualities into an objective world, we can just as surely build out an objective world of worth from the immediacy of our longings and demands with their implied formal presuppositions. The immediacy of feeling, too, has cognitive significance and can be made to yield, with freedom and intelligence of development, an objective order of worth, as surely as natural science, out of the immediacy of sense, can build the order of nature. This has been and is being done in the esthetic and religious development of the race. The pragmatic method applies to religion as much as to science; and though one life is too short to know much either about nature or the gods, the experience of the race must supplement and correct the experience of the individual. The solidarity of the race is presupposed in either case.

We may define pragmatism as scientific method conscious of its own procedure. The scientist has not always known what he was about. Sometimes he has emphasized the essentially innate nature of truth with Descartes and his followers. Sometimes he has demanded pure perceptions and a *tabula rasa*. Even when he has furnished good canons of procedure, he has not always been awake to what he has been doing. Pragmatism is not the invention of a new method; it does not furnish any new hypothesis; but

it insists that the scientific spirit of tentative hypothesis and verification shall dominate all our investigation, not only naturalistic, but philosophic as well. We must shear the luxuriance of imagination to fit the facts. Life must be given to winged thought by touching the earth of evidence again. And unless the hypothesis, however ingenious, helps us to anticipate and control, or understand and appreciate, the onrushing stream of human experience, it is not science but fiction, no matter how internally consistent it may be. The Newtonian equations, the religious beliefs, must terminate in the intended facts. Failing this, ideal construction must set to work afresh, until at least greater approximation is reached. An hypothesis, whether of atoms or morals, God or devil, is true because it works.

We do not wonder over the disappointment at this lack of novelty of the pragmatic method. No doubt Dr. Paul Carus expresses a general feeling when he says: "If pragmatism, as commonly understood, were truly nothing but another name for 'scientific method,' it would not have anything new to offer."[5] But what the critic forgets is that pragmatism is the baptism of a new consciousness as to the meaning of science. It makes definite and articulate what was only implied before. Few great reformations have been original, to any great extent, in their intellectual content. Their originality has lain mostly in the simplicity and directness of their aim—the clearness and intensity of their emphasis. And there is a good deal of difference between the common talk of agreement, begotten between intellectual sleeping and waking, and the clear consciousness of what the agreement of an idea with its object means—the termination or leading of an idea into its intended facts. It emphasizes negatively that there is no other criterion of validity, beside conduct; that mystical feeling, however subjectively satisfactory, must, in order

[5] *Monist*, Oct. 1910, p. 615.

to be proven true, submit to the test of the procedure of experience; and that no *a priori* conviction, no dogmatic insistence upon the inconceivability of the contrary, can have anything more than subjective significance, unless it terminates in the systematic experience of the individual and the race. They are no substitutes, in any case, for investigation and have, as feelings, attached to all sorts of ideas. We have but a single criterion of truth— the procedure of experience.

Does truth, as thus conceived, seem transient, provisional and pluralistic? This is only because we have become intellectually honest—conscious of our poverty. Truth has just as much unity and constancy as its use in experience indicates. Grand assumptions about it, do not increase either its permanency or reality. Its permanency and adequacy to reality must be tested by our ability to take reality that way. Its leading, so far as real, is not arbitrary but due to its seizing upon the real characteristics of its intended object, whether eternal or transient.

If pragmatism is essentially the scientific spirit, there is always need of a renaissance of the pragmatic consciousness in science. The authority of great names—the Archimedeses and Aristotles and Newtons; the impressiveness of tradition and technique, are too apt to overshadow the real, inductive spirit. We read facts out of court, or at least refuse to investigate, because the facts or alleged facts are supposed to be contrary to "laws," the only status of which is that of generalizations from facts. How great a rôle the *a priori* inconceivable, as we are pleased to call our intellectual prejudices, still plays in science! If it is no longer the inconceivability of the antipodes, it is the inconceivability of action at a distance, the inconceivability of mind influencing body, etc. When shall we learn that the best test of whether a fact *can* happen is whether it *does* happen and that it is the province

of reason not to *prescribe* the conditions, but to discover the conditions under which events happen? If our intellectual models make our procedure impossible, we must revise the models. If this is difficult in science, how much more in religious and legal practice. What a reform in science, law and religion alike, if we once had the courage to drop hypotheses which make no difference to our procedure. The value of conceptual technique is precisely to furnish such leading as will terminate in the facts. If it substitutes an abstract model for the facts, it should not be for the sake of hypostatizing the model, but for the sake of better anticipating the facts.

IV.

In its general emphasis, as well as in its thesis, modern pragmatism follows closely its ancient forebear. The scope of hypothesis or creative imagination has been largely neglected by modern pragmatists, as it was by Protagoras of old, and for similar polemic reasons. It is obviously so neglected in the thesis that truth consists in its consequences. It would be at least equally true to say that truth consists in hypothesis or in certain instinctive demands for unity and simplicity, for without either there could be no such thing as truth. We should be simply staring at things. We must not neglect the creative factor in knowledge— the building out by constructive imagination, as prompted by certain fundamental instincts, beyond the immediate, beyond sensations and feelings. It is true that this building out must be supported in the end by evidence, by consequences of immediate experience, but it is also true that without this building out of creative imagination, we would remain hopelessly swamped in the slush of subjectivism. On the other hand, mere hypothesis, while it may have its subjective value, cannot by itself give us objective truth. It must be tested by evidence, as well as by

the subjective satisfaction which it gives. And pragmatism has done well to insist upon this truth, as against the subjective imagination of such philosophies as Hegelianism.

In two important respects modern pragmatism has the advantage over ancient. One is in its superior psychological tools. It has shown more clearly than before, especially through William James, the teleological nature of the thought process, its connective value in the flow of experience, how ideas lean on facts and how facts are organized by means of ideas. The other advantage of modern pragmatism is its evolutionary and racial consciousness. To a large extent it is the outgrowth of the Darwinian spirit. It is a theory of the survival of hypotheses—those surviving which fit experience. But a theory of elimination, important as it is, cannot by itself account for knowledge, any more than the doctrine of the survival of the fittest can account for life. The variations themselves must be understood through their structural continuity with the past. In the case of knowledge this continuity becomes an instinctive or "physical heritage" in the form of certain demands, tendencies or needs. And it also becomes a psychological continuity or an imitative dependence upon the institutional life of the race, the "social heritage." The ideal variations or purposes must find their explanation in this twofold background, i. e., the biological tendencies as becoming conscious of themselves in attempting to assimilate the social heritage, and use it in the service of the ever new problems of life. From this process emerge the new purposes, guesses or hypotheses. These ideal constructions or demands must be tried out with reference to further experience; and those will survive which afford an advantage in meeting the intended object. More than one hypothesis may work for the time being; and at a certain stage of development a cruder hypothesis may work better than a conceptually more perfect one. The

crude four elements of Empedocles seemed to work better for the time being than the ingenious hypothesis of Anaxagoras or even than the atomic theory of Democritus. The axiom of an eye for an eye and anthropomorphic gods worked better at a certain stage of development than the golden rule and spiritual theism. In the long run, however, the workability of an hypothesis must mean correspondence with the reality which it intends—the seizing upon its identities for the guidance of conduct.

Beliefs, instinctive or articulate, are the grist which the pragmatic mill must grind or else grind itself. Human nature, conditioned as it is by its biological and social background, constructs its belief-worlds to supplement its inner needs. It is this impulse to create belief-worlds which has made religion advance by ever new variations and eliminations from fetichism and nature-worship to ethical monotheism; which has made science advance from the hypothesis of Thales that all is water, to our modern complex physical and chemical theories. These belief-worlds are not only thrown about us by ourselves, in our individual capacity, to be cozy in our world. They are first of all thrown about us by the race which wraps us snugly in the swaddling clothes of its own making. Else we would all start naked, to cover ourselves with fig leaves. Every scientist would be a Thales. It is only in the course of individual experience, if at all, that we make the old thought-clothes correspond with the new individual preferences.

V.

Knowledge, we have seen, must mean the differences that stimuli make to reflective human nature. All experience must be assessed from the reflective level—must issue in articulate judgments, if we are to have truth. Perhaps we may, in the light of the preceding discussion, venture to offer the following, tentative definition of truth:

Truth consists in the differences which objects make to the reflective conduct of human nature, as in its evolutionary process, it attempts to control and understand its world. This definition of truth recognizes the contribution of both the empiricists and rationalists, Protagoras and Plato. Both hypothesis and evidence, reflection and immediacy, are necessary to truth. It recognizes, moreover, the finitude of truth as an adjustment to an infinite process.

Past misunderstandings, however, lead me to think that the pragmatic doctrine of truth needs more explicit definition at two points. One has to do with the significance of the term conduct, the other has to do with the relation of pragmatism to nominalism.

First a word as regards the significance of the term conduct. My own conception of pragmatism is that its definition of truth in terms of conduct is fundamental. In this sense it is a "practical" theory of truth. It has to do with the procedure of thought, the control of our ideas in relation to an intended object. But here there has been considerable confusion. The original use of the term pragmatism by C. S. Peirce had to do with laboratory conduct specifically—the procedure in the experimental verification of an hypothesis. In James, Schiller and Dewey the emphasis has been on biological conduct—the attainment of certain goods on the part of the organism. No doubt truth is tested in part by this ability to control the environment for our specific purposes. But truth needs not be practical or instrumental in this external sense. Its leading may be of a formal kind, as in mathematical procedure. Its aim, too, may be that of understanding and sympathy, rather than use, as in our striving to know other egos. I have used conduct in a wider sense—including the conduct of the understanding as well as biological conduct.[6]

[6] *Journ. of Philosophy*, "What Pragmatism Is and Is Not," Vol. VI, pp. 627 and 628.

Truth must be measured in terms of the reflective procedure of our entire human nature in realizing its tendencies, formal or practical. It still remains true, on this more inclusive definition, that the truth of an idea consists in its leading, its ability to guide in the direction of its intended object, whether a chemical compound or an algebraic root. Thus taken, the term pragmatism will be true both to its Greek derivation and to all the requirements of logic. The rules that the will must acknowledge as governing this procedure of truth, I have discussed elsewhere.[7]

As regards the relation of pragmatism to nominalism, there has been considerable wobbling between the definition of truth in terms of leading on the one hand, and in terms of particulars on the other. I believe these to be incompatible definitions. If truth consists in the sum of particulars, there can be no leading. A photographic or cinematographic copy would be quite useless for purposes of conduct. But truth can never lie in the sum of particulars or their mere external association. Who wants to count the sands on the seashore or the leaves of the trees? It would be quite worthless, even if not practically impossible. The leading is made possible by the thread of identity—the ability to substitute certain constant characteristics for the motley world of facts and changes and thus to manipulate it in the service of our purposes. From the taint of mediæval nominalism, deliver us.[8] With such an understanding as regards the meaning of pragmatism, it ought to proceed more efficiently on its career of simplifying and unlocking the problems of life, theoretical and practical.

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[7] See *Phil. Rev.*, "The Nature of Truth," Vol. XIX, 395-417.

[8] In this I am happy to find myself in agreement with my friend, Dr. Horace Meyer Kallen. (See *Journ. of Philosophy*, "The Affiliations of Pragmatism," Vol. VI, pp. 657 and 658.)

THE SELF AND PERSONALITY.

TWO PHILOSOPHICAL POEMS BY GOTTFRIED HERDER, TRANSLATED BY CHARLES ALVA LANE, WITH AN INTRODUCTION BY THE EDITOR.

GOTTFRIED Herder, one of the great classical poets of Germany and a personal friend of Goethe, has left us two poems which belong to the class of philosophical literature in which he treats the problem of man and the significance of life. Like all philosophical poetry they have not found a large circle of readers and, so far as we know, have never been translated into English or any other language. Yet they deserve to be known and ought to become accessible in a worthy and readable version to the English speaking world. It is for this reason that Mr. Charles Alva Lane has rendered these two poems into English blank verse which is the meter of the original.

Herder was a theologian and, not without the influence of Goethe, had been appointed general superintendent of the Protestant churches of the allied Thuringian duchies. He was liberal in his theology, and it speaks well of the times that a man of his breadth could hold so prominent a place in the church.

In one of his best known books[1] Herder outlined the theory of evolution and applied it especially to history in showing that the development of mankind is subject to law, and that progress is noticeable in a higher and ever higher actualization of the human race.

[1] *Ideen zur Geschichte der Menschheit.*

In the two philosophical poems before us Herder insists that there are two aspects in man's destiny. In one sense man is eternal and even divine. He is like unto God himself, who in man has become incarnate, he the Creator, in one of his creatures. But on the other hand man's life is transient and he himself is like the worm that is trodden under foot. While man ought to be conscious of the dignity of his divine nature, he ought at the same time to repudiate that portion of his being which is accidental, temporary and unworthy of preservation.

In dealing with a problem of this kind it is of great importance to use the proper words for that which is divine in man in distinction to man's lower nature, and we believe that in dealing with this subject Herder has been unfortunate in the choice of his terms. In one poem he speaks of "self" as that which is eternal, which represents man's high and noble being and which ought to be regarded with reverence and respect; in the other poem he denounces that which is perishable and transient as man's "personality." So Herder comes to the conclusion that man ought to relinquish all interest in his personality and cling to self as being the spark of his divinity. The self is to him the deity that shapes man's being; it is the factor which produces all that is good and noble and worthy of preservation in the continued life of mankind, while his personality should be abandoned to death.

Now it seems to us that what makes man a rational being in contrast to the brutes is exactly his personality. Man becomes a person by dint of his reason, for by personality we understand an individuality endowed with the superior qualities of manhood. Animals, nay even plants and other objects of nature, are called individuals in so far as they are particular things which possess an existence of their own. But the particular thing, the individual, changes into a person as soon as it becomes a rational

being which can be held responsible for its actions. Personality accordingly is the expression of man's divinity. It denotes that quality in him which makes him divine, which liberates him from the bondage of natural law and endows him with the highest perfection in the range of creation, making him master of his own destiny. He can choose and direct, he can foresee events, and can modify the course of nature according to his needs. He traces law in the phenomena of his experience, and can recognize single happenings as instances of universal laws. This recognition of law is an echo of the divine destiny that governs the world, and in this sense every rational creature, every living being whom we signify by the word "person" bears the stamp of divinity. Accordingly we would prefer to call that which represents the divine in man, his personality. Those features which make him a person characterize him as being made in the image of God. They prove his superiority over brute nature and are the factors of his life which are cherished even after death and are preserved in memory from generation to generation. They are what Herder thus defines in his poem:

"What lives of us in other hearts again
Our truest and our deepest being is."

The term "self" is different. By it we understand a particular existence which insists on its individuality and such insistence is called selfish. It is exactly this selfishness which man must overcome in order to bring out the noble and lasting character of his personality. So far as a personality is merely an individual existence it has no worth, it is a self of material concreteness; while personality, that feature of the individual which changes it into a person, is exactly what makes the individual understand the significance of law. It is that which causes him to

see the universal in the particular and the everlasting type in single instances. This faculty, in one word called reason, not only endows man with intellectuality but in addition enables him to follow his conscience, that divine guide pointing out a higher course of conduct, in common parlance called moral or religious, and herein we find a realization of the divine in nature. It would therefore have been preferable if Herder had reversed his terms and had spoken of "the self" as the thing to be abandoned, and of "personality" as that which man ought to develop and cherish.

Herder's choice of terms appears at first sight accidental and we may understand by "self" what we would have denoted as personality and *vice versa*. But on close inspection we notice that this difference in terms indicates a difference in the philosophical explanation of man's nature. We must remember that Herder was still a theologian and though he was liberal, though his God was no longer the God of the Middle Ages but a philosophical conception of the divinity of the universe, he yet applies to God the human attributes of consciousness, and his argument is that the world would be a chaos, a play of blind forces, unless, like man, it were directed and governed by an all-consciousness.

Here, in our opinion, Herder's philosophical conception fails, and here the argument of his poems is therefore disappointing. He does not see that the underlying truth remains the same if he only grants that man's personality is the echo of the divinity of the universe. In man the law-ordained character of the universe reveals itself and accordingly the world is not a congeries of matter and a play of blind forces but a law-ordained whole, a cosmos. In a way we concede that the world is a congeries of matter and a play of blind forces, but a most significant feature of this stupendous mass of matter and energy consists in

its being subject to law. This law which governs the world exhibits a definite character, causing all its commotion to be possessed of a definite direction tending toward an unequivocal aim; and this aim, we may fairly well assume, must be the same everywhere as we find it to be here on earth. It is the self-realization of reason, of moral aspirations, a tendency to eradicate evil and let good will prevail. Life everywhere is a struggle, but the dignity of the struggle consists in the fact that there are ideals, the ideals of goodness, of truth, and of beauty, and that there is also the endeavor to realize them without regard to selfish ends.

It is true enough that man is an incarnation of the divinity of the universe, but that the universe should be a self like man, that the universe should be an ego, possessed of an ego-consciousness, is an assumption which has no warrant before the tribunal of scientific thought. If Herder assumes an all-consciousness, we can simply point out that his logical deduction is a mistake, a *non sequitur*. The underlying truth of his two poems, however, that man though transient reflects the eternal, remains untouched

It is true enough that the large masses of mankind are not philosophical and personify their conception of God. They can not think of him as a potent factor in the world and in the life of man except under the figure of a human personality, a powerful king or a kind-hearted father, and this conception is as legitimate as any poetical representation of abstract ideas. The truth therefore which Herder's poems bring out need not be discountenanced on account of his anthropomorphic God-conception. It remains true that the power that sways the universe is not blind force but a cosmic norm which gives a definite character to all that is.

We take a great interest in Herder's poems on the self and on personality, because he touches upon the deepest

problem of man's existence and in a certain sense solves it correctly. If the old theological God-conception still clings to him it does not spoil the beauty of the poems, and though he employs the terms "self" and "personality" where we would have preferred him to reverse them, his use may be tolerated if we consider the meaning which he bears in mind.

Mr. Charles Alva Lane has translated the poems so as to render a faithful version of the original. He has not attempted to change the meaning or even the words of the poet, and we leave it to our readers to judge of the beauty of these verses, together with their shortcomings. May they enjoy the presentation of these religio-philosophical thoughts in the way the German poet presented them, not as we might wish that he had done. Even with what we deem to be shortcomings, they are beautiful enough and worthy of careful study.

* * *

We will add a few words in comment on the meter, which is classical but is commonly called blank verse. In our present neglect of classical traditions the nature of blank verse is commonly misunderstood. Some text-books on the rules of versification go so far as to call them iambic pentameters, their authors being ignorant of the fact that iambic pentameters would consist of lines twice as long as these. The truth is they are iambic trimeters, but being cataleptic consist of only five iambi.

Classical prosody is by its very nature of a musical character. It does not know of rhyme, and the beauty of the verse is due to the rhythm of long and short syllables. The term meter corresponds to what in music is called a bar, and a foot is the ultimate unit of rhythm. In dactylic and anapestic meters a foot happens to be a meter, but in the iambic rhythm two feet constitute one meter, and so iambic pentameters would consist of twice five iambi. Be

ing accustomed to the fact that dactylic hexameters consist of six dactylic feet, our authors of metrical text-books have made the wrong conclusion that five iambic feet ought to be called iambic pentameters, and they are at the same time ignorant of the general principles in the classical system of metrics.

Another point of importance is the fact frequently overlooked that verses are separated by a musical pause or rest, enabling the reader to let the metrical form stand out boldly so that the ear may easily catch the musical sound of the verse. For this reason the dactylic hexameter is stunted at the end by having the last meter mutilated, as the final syllable is cut off, or rather replaced. by what in music is called a rest, equivalent to a short syllable.

In the iambic trimeter the last foot is omitted and in the terminology of classical prosody such a line is called cataleptic. An iambic trimeter accordingly takes the time of three iambic meters equal to six iambi, of which, however, the last one is either mutilated or entirely omitted, which means that it is replaced by a musical rest equivalent to either a full iambus or one long syllable. A schedule of the verse accordingly would be

$$\breve{} - \breve{} - \,|\, \breve{} - \breve{} - \,|\, \breve{} - \overset{\circ}{\breve{}}\,\mathrm{O}$$

We mark the rest for a long syllable by a large zero, and for a short syllable by a small zero, and we will say that the last long syllable is always replaced by a rest, and the last short syllable may be replaced by a rest or it may be preserved. In English, which abounds in monosyllables, it is easier to end a verse in an accented syllable, and so it has become habitual to avoid unaccented syllables at the end. This habit has produced the impression that to have blank verse consist of five iambi plus an unaccented syllable is a poetic license, but the truth is, as may be seen from our explanation, that this unaccented syllable is perfectly legit-

imate, as is also evinced by the fact that it does not disturb the euphony of the verse.

PERSONALITY.[1]

Would'st thou, O Friend, to halcyon peace attain?
Flee then thy haunting Personality!
With traitor-dreams it woos and slays the hope;
The heart and soul it narrows, and with cares
Discomforteth. With poison-fires it burns
The blood, and e'en the toiling breath it steals,
Till all the ways of life are choked and vain.

Declare, what is this Personality?—
When in the Mother-womb of parents twain
An alien Life came and was thee, plant-like,
On strange soil nourished, thoughtless didst thou hang,
And grow through inchoate life to human child.
Beholding not the world, it recked of thee,
And all its light burned round, thee to inform.
Her breath and kisses drinking, thou wert yet,
For helpless seasons of thy mother part,
And on her ministrant and cradling breast
Thou learnedst how the tools of Sense to ply.
But slowly from the mother-functions loosed,
The world's wierd pageantry upon thee wrought,
And in its own unresting image made
A Soul of thee—a thing of myriad moods
And ever-changing imagery of thought.

How grows the child? The foot and hand aspire;
The ear and eye, change-hungry, ever mould

[1] An effort has been made throughout this translation to follow with fidelity the thought and even the verbal forms of our author; but in several instances valid considerations have prompted slight variances from the text.

There is in German a certain directness of expression that would subject a literal rendering to a charge of verbal severity. German words have a wider range of mental connotations than have those of our more copious English tongue. Some latitude of expression is therefore essential to a faithful

Their melting forms of sight and sound. And so
Through boyhood, youth and manhood's stern estate
Thou passest on to gray senility.
In youth what lingers of the weanling's mood?
In boyhood's bounding pulse what token hints
The feebleness of age? Change creeps on change;
The body ever moulds itself anew,
And thou art even with thyself deceived
Until the mirror's message yields the truth.

In youth dost hunger for thy mother's breast?
When love upon thy burning heart hath seized,
Do bride and sister seem alike to thee?
And when the dream of honor drives thee forth
Desirest thou again the swaddling clothes?
Tastes now the sugar-plum as when, a child,
Thy palate welcomed its sweet ravishment?
Doth now the inner world, emotion-swept,
The airy phantasies that flit and charm,
The wide world's fronting problems seem the same
As erstwhile to thy childhood's prismy eyes?

Be thou a man! Life is a restless stream
Of ever-changing forms: Wave driveth wave
In serried tides that rise and sink and rise,
One stream, but not the same beyond the span
A melting moment fills, and not the same
At any place, nor in its mingling drops
From fountain to the welcome of the sea.

Shall such an unsubstantial phantasy
Foundation serve for duty and for hope,
And all the weal and woe that make thy life?
Upon a shadow wilt thou be established?

transcription of the thought; but the tendency to this indulgence has here been restrained even to the sacrifice, at times, of poetic effects.

Unto a frenzied image shall thy thoughts,
Thy glorious energies, and all the wealth
Of life's wide purposes devoted be?

Be thou a man! Nay, thou art not thine own:
Unto the great good All belongest thou.
From this thou hast received and borrowest yet.
Not only must thou unto it release
The things that individualize thy life,
But e'en thyself, thyself. For lo, a child,
A child eternal on the mother-breast,
Lulled by the beatings of her heart, thou liest.
Wert thou dissevered from all living things,
And from the life of generations flown,
Whence thou thy being and thy mould receivedst—
What then wert thou? No ego,[2] but a thing
Insentient, lost, ungathered from the surge
Of toiling elements. Each drop of life's
Fine essence; every corpuscle within
The blood; the flashing thoughts of heart and soul;
The deeds, resolves, the customs, and the play
Of life's ineffable activities,
Whose weird machinery thou knowest not;
Each utterance of lip, each subtle change
That giveth speech to features of the face,
Is but an alien token loaned to thee
By generous pasts for life's swift uses now.
So ever changed and ever changing wends
The bearer of unowned possessions through
The world. Discarding customs as a garb,
Anon he changeth speech, opinions, modes,
By restless marching of the years constrained,
Or by the mighty Mother's promptings moved.

[2] The original here reads simply *Kein Ich.*

What thought of thy ten thousand is thine own?
The kingdom of the genii, though one
And indivisible, an Ocean-world,
In stream and drop is flowing into thee,
Thine inmost being's character to form.
What of thy myriad feelings is thine own?
Necessity and love, and custom's sway,
And deeds of others echoed in thine acts,
And time and space, the bitterness of grief,
The burden of thy loneliness—lo, these
Have fashioned it, delivering to thee,
That so thy spirit's moulding-glue may catch
And model it anew to something great,
Yea, e'en into the good, the better All.
Thither is urging each desire, and thither
Doth every impulse of the soul constrain;
Each wish and yearning hath it for a goal;
The living fountains of activity,
The spirit's prying quests and haunting dreams,
The bridal-passion and the mother-love
Well ever thitherward. Thus from the germ
The bud unfoldeth to the fragrant bloom,
And, still a-yearn, strives upward into wealth
Of myriad fruits. And ever, evermore
The wide Becoming of the eternal All
Supplieth air and sun, and night and day:
The ego dies that so the whole may be.

And what is that which thou with thy poor I
Would'st to the future leave? Thy name, forsooth?
Ah, though thou Raphael wert, in Raphael's work,
I fain forget the man, and raptured cry
With Art's glad voice: "An angel painted it."

Thine ego? Thinkest thou, Posterity
Will long hold memory of thee? Thy name?

With ever-lessening voice, a few brief years
May echo it with that of Mavius
And Bavus, Stax and Nero-Herostrat.[3]

Nay, only in the Open of thy life,
When all unmindful of the narrow self,
Thy soul can find its immortality;
For then thou livest in a thousand souls,
And in a myriad hearts thy heart doth beat.
Eternal then, Omnipotent thou art,
A god, and like a god, invisible,
Sunk in the potency of nameless life.[4]

Yea, what it toucheth Personality
Doth blight, obliterating from thy work
The virtue of the eternal Genius
And benison of immortality.

So let us then in working and in willing
The potent promptings of the ego hush,
That so the better Thou and He and We
And Ye and They may moderate its sway,
And from its thralldom manumission win.
Of all things be our chiefest duty this:
Forgetfulness of self. So prospereth
Our work, and sweet each deed will be

[3] Mavius and Bavius were characters probably first introduced in some Roman comedy. The names became synonyms of the Poetaster. Virgil so uses them in his third Eclogue, and they are mentioned by Pope in the Prologue to his Satires. Gifford used the title "Baviad" for his Lampoon on the Della Crustan School of Literature.

After the destruction of the Temple of Ephesus by Herostratus laws were enacted prohibiting the mention of his name, the avowed object of his vandalism having been that of securing notoriety. The name Nero brands him as incendiary owing to the tradition that Nero set fire to Rome so that he might see how Troy would look in flames.

[4] *Unsichtbar-namenlos*: a free rendering is here presented. Perhaps the author had reference to the custom which obtained among Oriental religionists of coining the name of the Deity into unpronounceable forms, as in the Hebraic tetragrammaton JHVH, that so they might "let sacred silence meditate the theme."

To dull the glamour of unworthy pride,
And free, omnipotent, eternal make us.
Amid the spirit's aspirations lost,
Where living gulfs are throbbing with the joy
Of cosmic Choral Song, oh, be our soul
A dulcet note to swell the harmony!
Our heart a living wheel in nature's work!

When life at last shall lower its flickering torch,
And I the world with hungry questionings probe
And keen desires, the self shall not concern.
What gift will then my guardian genius grant?
Childhood? Or youth? Or even snowy age?
Their bloom hath faded, and I gladly drink
The Lethean cup. Then my Elysium
Shall no dead vision of misfortune mar,
Nor memory disturb of service vain.
Unto the gods I dedicate myself,
As Decius did, with gratitude profound
And confidence that knows no plummet's touch;
For lo, how richly doth the bounteous All reward—
The teeming and rejuvenating All!
Verily nothing less should I return
Than that which nature dowered me withal—
My poor, unworthy Personality.

THE SELF.

Forget thine ego, but thy self lose never.
From out the treasury of Godhood's heart
No gift more precious than thy self can come.

What thou receivest from the Mother-breast,
The throbbing bosom of the Universe—
The restless elements aflow in thee,
Air, aliment, the urging energy,

Form, thought and phantasy, are not thy self.
Thy self is what from these thou didst create,
What thou did'st fashion, hast been and now art.
Thou art thine own creator, thine own work.

Not what thou seest (animals observe);
Not what thou hearest (brutes can likewise hear);
Not what thou learnest, (ravens also learn),
But what, perceiving, thou dost understand;
The power that in thee works, the inner seer
Who from the past divineth what shall be;
The organizer, who from chaos spins
The pattern of the raveling universe
Into the tapestries of mind and sense.
This art thou, even as 'tis likewise God.

"The Godhood?" Verily! for fancy thou[1]
The chaos of the Universe sans soul
And purposeless; wherein no being bides
Who to himself and all things else is Law!
Conceive the ineffable insanity
That then would guide the reeling worlds! Adown
This barren chaos that itself knows not
Cast thou thyself! Would'st thou be then a self?

Back into thyself? Within the luminous
Seclusion of awareness there abides
A potent proof of an All-Consciousness.
Lapse backward: be an animal; the sense
Of human selfhood lose, and wonderest thou,
O fool, that thus thou losest Godhood too?

"The harmony of being!"—An empty word
To him who heareth not aright! Give ear

[1] This passage recalls that wonderful dream of Jean Paul Richter which constitutes the first *Blumenstück* of his *Siebenkäs*.

Unto the deep recesses of the soul,
And lo, from out the Silences thy heart
Will utter forth the word, choiring with all
The world of Him, the highest Self, the mind,
The soul, the essence of all beings, God!

So let it be! Within thine inmost soul
Build thou a temple to divinity,
And thence shall issue life's rich benisons:
Yea, thence shall whisper evermore that voice
Whose truth is Nature's self. Avouch thou then
The message, and henceforth become its priest.
At holiest altar serve it, that so be
Thou honorest thyself, attaining thus
Unto thy being's apotheosis.

The hateful image which thou, shuddering,
Beholdest in the mirror of thy life,
The Fury that to envy prompteth thee
And hatred and vain pride; who dispossessed
Thy soul of treasures dearest unto it;
Who locked thee as with iron from the sway
Of every tender impulse of the heart—
Lo, she is not thyself! Nay, unto thee
She serveth as the subtlest enemy
To rob thee of thy very self! Behold,
Hath she not barred thee from thy greatest joy,
Thy work? Opposed she not thy vanity
With vainer pride, which, overwhelming thee,
Embittered, so that all life's precious fruit
With poison reeked instead of odors sweet?
Yea, from thyself she parted thee, and graved
An image false to woo thee from without.
And seeking this, and loving it alone,
Foolish soul, thou, thou hast lost thyself!

Deceived Narcissus, art thou then but that
At which thou smilest in the fountain's depth?
The thing thou seest in the mirror's flash,
And e'en cajolest in thine echoed voice?
Alas, is then thy shadow more than thou?

And wonderest thou, who on the poison fumes
Dost live of thine own breath when other mouths
Return it unto thee—dost wonder then
That thou a shadow hast become, a spring
Dried up, a sepulcher of what thou wast,
A puppet, playing vainly with thyself?

Losing thy self what dost remain to thee?
What lives of us in other hearts again,
Our truest and our deepest being is.
That which doth make us kin to all the world,
That bringeth peace amid the storm and stress,
Wooing forgetfulness of evil things,
And toward the foolish pleading charity—
This is the Over-soul, the greater Self.

Deep in the heart, unprompted from without,
A power there is whose urge is heavenward.
It spreadeth out our wings upon the storm
As peacefully as on the brooding-nest.
Yea, reveling in this power which, at rest,
Yet acheth with the will to dare and do,
We mount forever upward, glad and free,
Rejoicing that our vision doth anon
The goal descry where ends the pilgrimage.
Who is it? A supreme and sovereign Self.

Who beareth thousands in his loving breast,
And pitieth their infirmities; who turneth

To light their darkness, bearing in himself
The rule that measureth all blessedness:
"What thou would'st not have hap to thee, that do
Thou not to others; what thou would'st, do first."—
Who is this human god, the motive and
The power that doth within thee nobly will
And do? A Self omnipotently good.

Talent is not the man. The spider weaves;
The wasp and bee can build, for e'en in these
Is Art's fine instinct bred. The singer's heart
May not be throbbing in the tender song,
Nor what the player plays be inly felt.

The coward slinks, a shadow, through the world;
The fool his substance wastes; the sycophant
Seeks empty paths his flattery opes to him;
The weakling trembles, dying many deaths.
But who's immortal? T'is a deathless Self.

Ambrosia, fruit of immortality,
And fadeless wreaths of amaranthine blooms,
Lo, these are token and reward of Man's
Divine endeavor, plied in termless toil,
By Good-will prompted and th'impelling Voice
That will not to the clay-world say, "Thou art
My sire"; nor to the worms, nor to decay,
"Ye are my brothers, sisters, mother!" Nay, but calm
Before the abyss that yawns, the heaven that spreads,
It saith: "What in me dies, is not my Self!
What in me lives—the quick within the soul,
The eternal—knoweth not the touch of death.

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CRITICISMS AND DISCUSSIONS.

JOSEPHUS AND TACITUS ON CHRIST.

It is to be regretted that the Josephus passage on Christ is defended anew as genuine by Chwolson. Its clumsy character and the fact that it is not cited by Origen, who moreover declares that Josephus was no Christian, is enough to stamp it as interpolated; and it has long been considered as such by all unprejudiced readers.

In regard to the passage on James, however, we ought not be too quick to declare it likewise an interpolation.

The passage does *not* stand in brackets, as being spurious, as Prof. W. B. Smith says.[1] At least not in one of the latest critical editions of Josephus by S. A. Naber, 1892, ("post I. Bekkerum" as the title-page reads, an editor mentioned by Dr. Smith). In this edition the Christ passage is distinctly bracketed but not the James passage.

Further if the James passage is not genuine, what do the words "and some others" following it mean? The sentence containing the passage says that the high priest Ananus brought before the synedrium the brother of Jesus called Christ, whose name was James "and some others"[2] accusing them of transgressing the law, and condemning them to be stoned. The words "and some others" surely imply that in the foregoing words there was a reference to certain distinct persons. There surely was not a blank before "and some others."

Origen does not cite the passage, and what he cites from Josephus is nowhere to be found in the text. Still when he cites Josephus in his loose way, probably not having a copy of Josephus with him at the time, he must have had in his mind a recollection that Josephus had somewhere mentioned James the brother of Jesus as having been stoned by the Jews. From having this

[1] See "The Silence of Josephus and Tacitus" in *The Monist* for October.

[2] *καὶ τινας ἑτέρους.*

fact in his mind Origen made the assertion that Josephus had ascribed the destruction of Jerusalem to the murder of James. The fact is that Josephus in his *Bellum Judaicum* several times ascribed the destruction of the city to the wicked deeds of the zealots, murdering such men as Zacharias, the son of Baruch, very probably the same one mentioned in Matt. xxiii. 35, and others. From these different elements Origen constructed his very loose reference to Josephus.

Another point in connection with the James passage is the following. If this passage is a Christian interpolation, we ought to expect that the interpolator would have brought the death of James more in accordance with the lengthy account of that fact as given by the early church historian Hegesippus (died 180). We should expect that the interpolator would not have contented himself with the few words about James in that passage, while the Christ passage is quite an extended affair. According to Josephus the death of James is the result of a premeditated legal trial brought about by the Sadduceic high priest Ananus; according to Hegesippus it is the result of a sudden outburst of fanatical scribes and Pharisees and their followers among the people without any preceding legal trial whatever (*Hist. Eccl. Euseb.*, II, 25).

But even if this James passage proved to be an interpolation, are we bound to pin our conviction that Jesus was historical and had brothers as other human beings, on such writers as Josephus? Do the writers of the New Testament count for nothing in this question, when Paul speaks of the married brothers of Jesus and the oldest gospel, Mark, mentions James, Joses, Judas and Simon as his brothers and besides sisters (Mark vi. 3)? Dr. Smith gets around the term "brothers" by declaring them only spiritual brothers of Jesus. According to him the nonsense comes out that it was the spiritual mother and brothers of Jesus who came to take him home (Mark iii. 21 and 31). For what reason then did Jesus say: "Who is my brother, and mother and sister etc." (verse 33), if those coming to take him home were not his real mother and brothers? The words of Jesus would have been no contrasting words at all but pure nonsense. Professor Smith says that Jerome gives the right opinion of James the brother of Jesus. Does he not know that at the time of Jerome, and as early as that of Origen, in order to make Mary a perpetual virgin, James and the other brothers of Jesus were against all sound exegesis declared to be children of Joseph from a previous marriage?

In order to defend his idea that spiritual brothers of Jesus were meant, Dr. Smith treats the text of 1 Cor. ix. 5 with the most unexcusable arbitrariness combined with the utmost disregard of New Testament Greek. He says there were two classes of "Messianists," spiritual brothers of Jesus and those of Kephas. Now it does not read in Greek *Kepha*[3] but *Kephas*.[4] If brothers of Kephas had been meant the genitive form *Kepha* would have been used and not the nominative form *Kephas*. Throughout the New Testament all Hebrew proper nouns ending in *as* have the genitive singular in *a*. (Compare Winer, *N. T. Grammar*, § 8). We have here a warning example of what twistings the New Testament text has to suffer in order to substantiate a preconceived theory; as also of what importance it is not to overlook the minutest distinction in grammatical forms. Such little matters can upset a whole elaborate theory. No commentator has till now understood this passage in any other way than that Paul spoke of the married brothers of the Lord and the married Kephas, who, as we also know from the gospels, had a mother-in-law. Does not the verse distinctly read: "Have we no authority to lead about a sister, a wife as the rest of the apostles and the brothers of the Lord and Cephas"? Why then this whole unjustifiable talk of Dr. Smith and his bold assertion that "it is never hinted that James was really consanguineous with Jesus?" What else did the second gospel mean when mentioning James in company with the other brothers of Jesus?

In this connection I will also add that if, as Dr. Smith asserts, the James passage is wanting in some Josephus manuscripts, and Hilgenfeld thought it was expunged from Christian manuscripts of Josephus, perhaps Hilgenfeld is not so entirely off the track after all, for to the believers in the perpetual virginity of Mary the least thought that Jesus had real brothers was blasphemy. To such believers the James passage, written by a Jew who did not accept Christianity, speaking of a real brother of Christ might have appeared as a dangerous misleading passage. Let me say that in the above mentioned edition of Josephus I can find nowhere in the critical notes any mention of manuscripts in which the James passage is wanting. But to repeat again, even if this passage should be an interpolation, we are not in any way bound at all to base our conviction that Jesus was historical on Josephus.

More importance is attached to the silence of Josephus on Jesus

[3] Κηφᾶ.

[4] Κηφᾶς.

than is necessary. In his history of the Jewish people written for pagans he had very little cause to mention the obscure Jewish teacher Jesus whose public career perhaps hardly lasted a year, and it is even quite accidentally that he comes to speak about John the Baptist and his death in *Ant.* XVIII, 5. 2 in connection with a defeat of Herod Antipas, looked upon by the people as a punishment for killing John. "Presumably," says Dr. Wernle,[5] "Josephus too well knew that in the same way Christians looked upon the destruction of Jerusalem as a divine retribution for the execution of Jesus; he surely did not wish to please the Christians by placing the fate of Jesus in these political connections. We do not perfectly know the motives of his silence. It would only be a proof against the existence of Jesus, if not Josephus, but an exact, strict chronicler had in this way passed by Jesus."

* * *

In regard to the Tacitus passage Dr. Smith forgets entirely that it is copied by Sulpicius Severus (end of the fourth century) almost verbally in connection with Nero's persecutions. Severus in his history, when speaking of this persecution, uses the following words, with which compare the Tacitus passage given in full by Dr. Smith.

"Neque ulla re Nero efficiebat, quin ab eo jussum incendium putaretur. Igitur vertit invidiam in Christianos, actaeque in innoxios crudelissimae quaestiones; quin et novae mortes excogitatae ut ferarum tergis, contecti laniatu canum interirent. Multi crucibus affixi aut flamma usti, plerique in id reservati, ut cum defecisset dies, in usum nocturni luminis urerentur" (*Chron.*, II, 29).

In order that Professor Smith may not suspect that the Tacitean passage was doctored by means of that of Severus, as he seems to make Poggio Bracciolini responsible for the passage, I will here give another passage from Severus, copied from Tacitus, which is in nowise whatever connected with the Christ passage of Tacitus. Severus when speaking of the criminal and obscene festivities given by Nero (before the fire) uses the following words:

"Ad notasse contentus sum hunc eo processisse ut Pythagorae cuidam in modum solemniorum conjugiorum nuberet; inditumque imperatori flammeum, dos et genialis torus et faces nuptiales, cuncta denique quae vel in femina non sine verecundia conspiciuntur spectata" (*Chron.*, II, 28, 2).

[5] In *The Sources of the Life of Jesus.*

With this compare the following from Tacitus (*Annal.*, XV, 37):

"Ipse per licita atque inlicita foedatus nihil flagitii reliquerat quo corruptior ageret, nisi paucos post dies uni ex illo contaminatorum grege (nomen Pythagorae fuit) in modum solemnium conjugiorum denupsisset. Inditum imperatori flammeum, visi auspices, dos et genialis torus et faces nuptiales, cuncta denique spectata, quae etiam in femina nox operit."

As said, Severus copies *Annals*, XV, 44, only in regard to the persecution. He had no reason in his work for Christian readers to cite Tacitus as authority for the historicity of Jesus, nor had any of the Christian apologists in their apologies to the Roman government any reason to cite Tacitus or Josephus or other profane writers for the historicity of Jesus. This was with Christians a settled fact. I say this because nowadays there are some who insist that Christian writers must have cited non-Christian writers in regard to the existence of Jesus, otherwise Jesus was not historical, or the respective passages are all forged. The same pertains to the persecution under Nero. The demand is made that under all circumstances early Christian writers must have cited Tacitus with regard to the Neronian persecution otherwise it is not historical or the account of it in Tacitus is forged.

People making such demands forget: (1) that Tacitus on account of his peculiar and very difficult style was very little read even in antiquity. Vopiscus (about 300 A. D.) says that the emperor Tacitus, a namesake of the historian, ordered that the works of Tacitus, the historian of emperors, should be placed in libraries, in order that they should not be lost (*Vita Tac. imp.*, X, 3); (2) that the traditions of early Christianity (oral and written) with regard to the execution of Jesus under Pontius Pilate and the Neronian persecution demand as fair treatment as that of profane writers.

From whatever of the many early opposing Christian sects the traditions may be derived, they are unanimous with regard to both facts. Concerning the Christian tradition that Jesus was executed under Pilate I will not lose any words. With reference to the persecution under Nero I will ask: Is it right to assume, when Melito (170 A. D.) and Tertullian refer directly in their apologies to a persecution under Nero, that it has no basis? Shall the correspondence between Paul and Seneca of the fourth century count for nothing? The spuriousness of this correspondence does not affect the tradition it gives that Christians and Jews were punished as in-

cendiaries by Nero. Is it right to slight such early Christian writings as the Apocalypse of John and the letter of Clemens Romanus of the end of the first and the beginning of the second century, who, though not speaking directly of a persecution under Nero, nevertheless speak of persecutions and *special* ones too? Clemens Romanus devotes a long paragraph to the Christian "heroes of the recent past," as he expresses himself, under which he enumerates Peter[6] and Paul and "a great number of chosen ones" (among them women) who suffered "atrocious and impious treatment" and "manifold indignities and tortures" and thus became "glorious examples in our midst." This Clemens writes from Rome to the Corinthians (*Clem. Rom.*, V-VI). The seer in the Apocalypse (xx. 4) sees "the souls of those who had been beheaded on account of the profession of Jesus and on account of the word of God, and who had not bowed down to the beast nor to his image, and had not taken his sign on their foreheads and their hands. And they lived and reigned with Christ 1000 years." And who is the beast? Nero as signified by the number 666,[7] and by the words[8] "who was and is not and is about to rise again," referring to the belief current among the people that Nero, who was believed to have fled to the Parthians, was still alive.

Concerning Christians in Rome in the sixties of the first century and the possibility of their persecution by Nero, must be noted: (1) that Paul in his letter to the Philippians written about the year 63 from Rome, sends greetings "from the household of Cæsar," probably inferior servants; (2) the connection of Poppæa (the last wife of Nero, kicked to death by him in 65, about a year before the conflagration) with Jews. She interceded, according to Josephus, for the Jewish high priest and other Jewish authorities in a dispute between them and the procurator Festus. Josephus further relates in his autobiography how he obtained favors for accused priests through Aliturus, a Jewish actor, much beloved by Nero. Is it not possible, then, that Nero should have known of Christians, and could not intrigues have happened against them in his own palace when the Roman people, according to Tacitus, suspected Nero of having caused the great fire himself? In order to divert this sus-

[6] The apocryphal "Ascension of Isaiah" (2d century) mentions the death of one of the twelve apostles by Nero.—The great enemy of Christianity, Porphyry (3d century), also speaks of the crucifixion of Peter, cited by Harnack in *Die Mission der Urkirche.*

[7] Compare my article "The Number of the Beast," *Open Court*, April, 1909.

[8] Rev. xvii.

picion from his person to the Christians, as Tacitus says, may not Jewish intriguing in his own neighborhood have combined?

The relations between the Jews and the Christians were very strained in Rome according to the last chapter of the Acts and the letter to the Philippians. Besides this, the Christians were a very suitable class to fix upon as incendiaries, since they talked so much about the great final world-conflagration. And if the wrath of the people had once been directed by Nero against the Christians it may well have happened that Christians and Jews were indiscriminately punished as incendiaries, as the spurious correspondence between Seneca and Paul says. The harsh judgment which Tacitus passes on the "Christian superstition," which some consider as a sign of Christian interpolation is not any worse than that which he passes on the Jews and their proselytism in his Histories (V, 5), where he says: "Every vile person, after spurning the religion of his fathers brings to Jerusalem tribute and gifts, for which reason Jewish affairs have grown; and because they have a stubborn faith among themselves, they are ready for sympathy (among themselves), but towards all strangers they have a hostile hatred." The possibility of a persecution of Christians, the offshoots of Judaism, under Nero, I think ought not to be denied by any one who is acquainted with the Roman persecutions of the Jews and adherents of other foreign religions in those days.

If the Christ passage in the Annals was forged earlier or at the time of the rediscovery of the Annals in the first quarter of the fifteenth century, as some contend and to which Dr. Smith also seems to be inclined, I would like to ask what object the forger could have had. To prove the existence of Jesus, either in the first centuries or in the Middle Ages or at the beginning of the modern period? As far as I know, the existence of the person of Jesus was doubted neither in antiquity nor in the Middle Ages nor at the beginning of modern times. The doubts about Jesus in all the periods mentioned concerned rather more the theological dogmas about him.

The Tacitean passage says not a word about what Jesus taught or did, or what his followers thought about him. It simply makes the very general statement that Christ was the founder of the Christian "superstition." The case is quite different with the interpolated passage in Josephus. That passage is one with a definitely dogmatic import speaking of what Christ was and going into minute details. The interpolation is so clumsy, and for that reason so comparatively

harmless, that one is inclined to think some Christian inserted it originally in a marginal note to fill out the gap he thought he discovered in the history of Pilate. Such interpolations are numerous in ancient times and in Greek and Roman writers who have nothing whatever to do with Christianity. Originally written in the margin, they were inserted in the text by a later transcriber. But the keen eyes of critics have generally detected the foreign material, for the reason that it usually does not fit in with the context.

It is entirely different with the Tacitus passage. It fits in perfectly naturally in the context. Every reader of Tacitus has thought so thus far. Dr. Smith labors greatly to the contrary of course. Because that cunning interpolator has forged this passage into the context in order to prove the historical existence of Jesus, foreseeing the hot dispute in our times on that question. In order to cut off the suspicion once for all that the Tacitus passage was forged at the time of the rediscovery of the Annals, let me say that it stands in *all* existing manuscripts, the Medicean as well as other manuscripts not related to the Medicean. This on the authority of Fourneaux. (H. Fourneaux, *The Annals of Tacitus,* Oxford, 1896, Latin Ed. In the critical preface of Vol. II and notes on passage.)

I do not lay much weight on the matter of the Tacitean style of the disputed passage. Nevertheless the interpolator, if such he was, is not only to be congratulated for the miraculous foresight of the coming dispute centuries later on the existence of Jesus, but also on his masterful imitation of the real Tacitus. He was certainly unique. Still he has betrayed himself, according to Professor Smith, who otherwise admits the masterful imitation of Tacitus on the part of the alleged interpolator, by saying *humani generis* instead of *generis humani.* Now Tacitus may have simply placed the adjective before the noun in this case to give emphasis just as he does in other cases, of which Dr. Smith gives examples. If Tacitus says in Histories, V, 5, of the Jews that they "had a hostile hatred to all others,"[9] may he not in this passage, by placing *humani* before *generis,* intend to say that the Christians were not convicted only of their hatred towards the Roman race or any other race (*Romanum genus* and *Grajum genus* etc., occur often in Roman writers, Cicero and others) but towards the (whole) human race? In the concise and obscure style of Tacitus a single word sometimes gives effect to a sentence and if the meaning of the word is missed, the sense of the writer is not reached. "A disagreeable hiatus," as Dr. Smith

[9] *Adversus omnes alios hostile odium.*

says, is no more to be found in the phrase *odio humani generis* than in the phrase cited by him from the life of Agricola by Tacitus *generis humani aboleri.*

In connection with the Christ passage in Tacitus, Professor Smith refers to the words of Suetonius on the persecution of Christians under Nero and to the Pliny-Trajan correspondence. Of the former he says, "The sentences of Suetonius *may* be genuine, but they attest nothing strictly relevant"; of the latter, "Like may be said of the Pliny-Trajan correspondence." Is that so? Is the attestation of the account of Tacitus on the persecution of the Christians under Nero by another profane writer not of any relevancy? Are the words of Suetonius in the life of Nero, "The Christians, a people of a new and wicked superstition were afflicted with punishment," not of any importance when the question of a persecution of Christians under Nero is discussed? Is the Pliny-Trajan correspondence not of any relevancy regarding a "pure-human founder of Christianity," to use the words of Dr. Smith, when Pliny says in his letter to Trajan that the Christians he had under torture confessed that in their assemblies "they spoke in turn a liturgy to Christ as if a god."[10] Do the words "to Christ as if a god" not imply a deification of Jesus? I can't understand it otherwise. I doubt whether the thesis of Dr. Smith that "extant profane literature is silent concerning the life, career and death of a pure-human founder of Christianity" is "fully proved," as he says, by him. I have had the impression several times that Dr. Smith is stronger in his assertions than in his proofs.

It is good for the question of the existence of Jesus to be discussed from all sides in order to get at the truth. But let it be done with a calm balancing of all facts and not by assertions alone.

I would ask those who deny the historical existence of Jesus to be more modest and tolerant towards the "liberal critics" in this question, whom I have seen called "stupid" in print by adherents of Drews and others taking a similar position and whom Dr. Smith also calls "much higher than deep."

Those who make such a noise about the new discovery of Drews, Kalthoff and others, forget or do not know that all this has happened before. David Strauss was surely one of the most radical critics in regard to the person of Jesus. And just as the liberal opponents of Drews are now being ridiculed, so this radical critic was treated with supercilious contempt by Bruno Bauer, as being comparatively

[10] *"Carmenque Christo quasi deo dicere secum in vicem."*

orthodox and a merely apologetic writer. Bruno Bauer considered that he himself had reached a far higher elevation and had settled once for all the problem of Christianity and Jesus. A forerunner of Drews and others he denied that the gospels had any historical basis whatever, but claimed they were simply the product of the human self-consciousness. He denied the authenticity of all the Pauline epistles and considered them written in the second century. This was sixty years ago. Finally he broke entirely with his former friends, the liberals, by writing a pamphlet against the emancipation of the Jews! I imagine that I hear great rejoicing in the ranks of orthodoxy. They will cite the words of Jesus: "If a house be divided against itself that house will not stand." They will triumphantly say: "Just see how these infidels call each other names and rage against each other. This is our gain and will strengthen our cause the more."

The extreme hypercritical views of Drews and others will hurt the cause of liberal thought more than anything else. The liberal part of the clergy in Germany has for some years been publishing a series of pamphlets under the title "Religio-historical Books for the People" in which they unhesitatingly give the scientific results of free research concerning the origins of Christianity, its evolution, higher criticism, etc. All these studies are based on searching but calm unprejudiced historical and scientific investigation. These books of enlightenment have had an enormous sale in Germany. The orthodox party became so alarmed that they published a counter-series.

Now come Drews and others in Germany the best allies of the orthodox party. The opinions of Drews will scare away those who perhaps would have been won over to the liberal side. Extreme views generally hurt any cause more than they help it. On the other hand these extreme views are picked up with avidity by those who look upon Christianity and religion altogether not as an evolution but as a long series of priestly knavery and religious graft without any redeeming feature. If the historical existence of Jesus is absolutely denied, if every passage in profane writers concerning the existence of Jesus is declared as interpolated, this is water upon the mill of those who say, as one said to me in a public discussion, "When the time came that the Christians had control of every copy of every book that existed in the Roman empire, they made Josephus and every other historian say anything they thought of interest to the church." There is an impression among certain quarters that

the Christian clergy did not occupy itself with anything else but the falsification of profane writers. But this is not all. In 1878 Mr. Stuart Ross declared the whole Annals of Tacitus forged. After him the Frenchman Hochard rejected not only the Annals but all the works of Tacitus, the correspondence between Pliny and Trajan and the passage in Suetonius concerning the persecution of Chrisitans under Nero. The climax was reached by K. T. Bellairs who in a pamphlet entitled: "Is Christianity a Forgery; Is English History a Fraud?"[11] declared *all* classical literature, Josephus and the Bible as works made up towards the end of the Middle Ages by monks, and that "there is not a historical or Christian authority that can date prior to about 400 years ago"!!! I could give some more such edifying statements from these quarters but will refrain.

I am sorry to see Dr. Smith somewhat in the company of such men as Ross and Hochard though he is not quite bold enough to follow them fully. It is a dangerous, risky proceeding when building up theories, to leave the solid ground of facts and to build only on pure abstractions; such structures may be sometime consigned to the lumber-room of curiosities in the history of research just as it has happened with the theory of Dr. Bruno Bauer.

A. KAMPMEIER.

IOWA CITY.

COMMENT BY WILLIAM BENJAMIN SMITH.

To the foregoing criticism no extended reply seems needed. On the main points at issue the reader may be left to form his own judgment. Some minor matters may be noticed.

1. *Imprimis* let it be said that none of the things Dr. Kampmeier thinks were forgotten were really forgotten; they were all in mind, but were omitted (along with certain lines of Juvenal) as not worth mention. Since representative critics laid no stress on them, it seemed needless to introduce them into an article already prolonged to double the desirable length. Why mention Sulpicius Severus, who died A. D. 425, who has not "copied almost verbally" from Tacitus, whose statement so far as we know is not copied at all? The agreements in several phrases do seem to indicate some relation between the two passages, but what relation cannot be made out. To me it seems far more likely that the Sulpician passage is the elder, merely elaborated in the Tacitean. Or the two may have

[11] London, W. Stuart & Co., 41 Farrington St., the same firm publishing works of Ross.

a common unknown origin. Surely no proof is given that Sulpicius derived from Tacitus.—The words of Clemens Romanus were quoted so far as they bore on the matter in hand. His vague remarks about "a great multitude of elect" who had "furnished us with a most excellent example,"[1] and his unintelligible (perhaps interpolated) phrases about "the Danaids and Dirkai" were omitted as affording no basis for any argument. So too the correspondence of Paul and Seneca, dating from the fourth century, though held genuine by Jerome—surely no one will summon it to witness for a Neronian Tacitean persecution. When all the older witnesses are dumb, will you break silence with words not uttered till nearly 300 years after the event in question? Will you establish by an obscure chronicler of to-day some all-important feature of the London fire of 1666, some supreme dramatic moment unattested by Pepys or any other authority? Such is not the method of historical criticism.

2. In saying the passage concerning James in Josephus (Ant., XX, 9, 1) had been "bracketed," I may have had in mind a footnote in McGiffert's Eusebius, p. 127, where all the words in question are actually bracketed; it is not easy to say positively, for my own words were written nearly six years ago; nor is it necessary. To "bracket" is used figuratively for to "regard as spurious," since an editor or critic sometimes actually brackets suspected passages; and that the words in question, including καὶ and ἑτέρους, are strongly suspected by impartial critics is perfectly well known. Schürer (*The Jewish People* etc.) says, "There is considerable ground, however, for the suspicion of Christian interpolation" (p. 186), and again, "which is open to the suspicion of interpolation" (p. 187), and again, "the genuineness of this passage is also very seriously disputed" (p. 149). Volkmar, maintaining the genuineness (*Jesus Naz.*, p. 347), admits that "even Credner," followed by Rothe, "thought he *must* regard it as Christian interpolation." Enough; that the passage has been suspected and even rejected is certain.

3. What Dr. K. would regard as "nonsense" may be calmly affirmed: that the mother and brethren of Mark iii. 31, who "stand without," symbolize the Jews in their rejection of the Jesus-cult. It is not strange that such metaphors should be used in different senses at different times and by different writers.

4. The combination, "Brothers of Kephas," is not indeed warranted by 1 Cor. ix. 5, where every one must read, be he Greek or

[1] "Magno exemplo fuerunt nobis"—so reads the *versio antiquissima*, edited by Germanus Morin (1894).

English, "and Kephas," not "and of Kephas." The invocation of Winer was not necessary. The obvious criticism of the language occurred to me before any one else had made it, but not when I was in position to correct the expression. The peccant phrase had been incautiously adopted from I know not where nor whom, as preferable to the awkward "those of Kephas" (which it was my wont to use) suggested by the words "but I of Kephas" quoted from 1 Cor. i. 12, which evidently formed the real basis, solid and sufficient, for the notion of such a group of Messianists. Even granted, however, the full force of Dr. K's linguistic stricture, it remains without any logical virtue whatever; for the existence of such a group as "those of Kephas" (who said "I am of Kephas") is proved, and "the brethren of the Lord" still remain the same as in Matt. xxviii. 10, 16, namely, disciples. The imagination of any "twisting of the New Testament text" seems excited. In an unimportant *obiter dictum,* it is not very strange if the phraseology should be hasty and inaccurate.

5. As to the "number of the beast," 666 (or 616), the brilliant interpretations of Fritzsche and others had their day of fascination, but it is past; no less an authority than Gunkel declares *"die zeitgeschichtliche Erklärung ist bankerott"*; at least, one can hardly build on it.

6. As set forth in the article, it can scarcely have been "that Christians and Jews were indiscriminately punished as incendiaries" (Kampmeier), else Josephus would have mentioned it. Neither was the notion of "the great final world-conflagration" peculiar or even proper to the Christians, but borrowed from the Stoics, whose technical term therefor was *ekpyrosis.*

6. It is a good many years since attention was emphatically called to the supposed testimony of that notable mosaic, the "Ascension of Isaiah," to the supposed martyrdom of Peter under Nero, which Dr. K. mentions in a footnote. Without discussing the "Beliar" of this "Ascension," it may be enough to quote the very recent judgment of Weinel, the fiercest foe of *Der vorchristliche Jesus,* (Hennecke's *Neutestamentliche Apokryphen,* p. 205): "It were indeed most highly interesting, if we had here an oldest witness of the martyrdom of Peter in Rome; but that cannot be made certain."

7. The all-important, indeed the decisive moment in the whole matter, which was perhaps not sufficiently stressed in the original article and cannot be stressed too strongly, is this: It is *not* denied

that Nero *may* have persecuted Christians, *may* even have executed some, possibly Paul or Peter or both. On this point we have no decisive evidence. The writer has no interest of any kind in questioning over-strictly the supposed testimonies to a Neronian persecution. It is the *Tacitean* persecution described in the famous 44th chapter that is called in question as admittedly inexplicable and not only unsupported by testimony but virtually excluded by unbroken silence in every quarter, even where its fame would have resounded loudest and longest. *Here is the nerve of the matter.* It is vain to pile up hints of a mere Neronian persecution, even were they wholly unambiguous and not so hopelessly equivocal; all such are irrelevant. It is the Tacitean persecution that calls for verification, and *none is forthcoming.* When the skull of a man is broken, it is idle to fix attention on a fracture of his arm. Now since it is not pretended that Tacitus invented the story in question, in discrediting the authenticity we also discredit the genuineness, *as it stands.* What *may* have lain at its base, it is needless to conjecture. That this Tacitean account can hardly be accepted at its face value seems to be growing clearer to the liberal critical consciousness. Witness the recent work of Geffcken, *Aus der Werdezeit des Christentums.*

8. Since one apocryphal document (Ascension of Isaiah) has been called to the stand, it may be well to admit some others. In the "Martyrdom of St. Paul" (Lipsius, *Acta Apocrypha,* I, 102-117), referred by Zahn to A. D. 150-180, we find the Apostle executed by Nero in the midst of a fierce persecution at Rome, which however is wholly unrelated to the conflagration; the Tacitean passage and motive are not only not mentioned, they are plainly excluded. Of course the whole story is fiction, but if the 44th chapter or any tradition consistent with that chapter had been known to the apocryphist, it is hardly possible that he would have unnecessarily contradicted it by necessary implication. Again, in the Acts of Peter (Lipsius, *A. A.,* I, 45-103), according to Schmidt dating from A. D. 200-210, we find this pillar apostle also executed under Nero *but by the prefect Agrippa* and for personal reasons, his preaching having alienated many wives and concubines from their husbands and lords.[2] Thereupon Nero is angry, having wished to punish Peter still more severely, refuses to speak with Agrippa, and meditates the extermination of all the brethren discipled by Peter, but is dissuaded by a vision and remains satisfied with the sole sacrifice of

[2] Is this an echo of the words of Clemens Romanus: "Zeal hath alienated wives from husbands" (VI)?

the apostle. Here again the Tacitean account, along with any similar tradition, is positively excluded. To be sure, this martyrdom is imaginary, at least in its details, but the mere imagination shows convincingly that the great Neronian persecution in connection with the conflagration, as detailed in the 44th chapter, had no place in the Christian consciousness of that author and hence of that era. When we turn to the Acts of John, we see how eager these romancers were to attach their fancies to historical facts. Had any such attachment been possible in the case of the martyrdoms of Paul and Peter, it would have been eagerly effected. The complete absence of this Tacitean persecution from attested Christian consciousness, in which it would have rooted itself ineradicably, cannot be understood without impugning the actuality of the persecution itself.

9. Finally the whole story presents all the hall-marks of a fiction, of a gradual growth in the Christian mind. The nearer we approach the event in question, the vaguer and dimmer it becomes. As we touch it, lo! it dissolves into air. For one hundred years after its supposed occurrence, the mighty persecution is not mentioned. The earliest Christian writers, those who would certainly have had a personal or next to personal knowledge of the alleged execution (of the Christians as incendiaries), betray no consciousness that any thing of the kind had ever taken place. They speak fluently about the sufferings and martyrdoms of their brethren. Some allusions to the alleged Neronian holocaust lay directly across their path; *why do they all avoid it?* In the second century the notion of Nero as persecutor begins to present itself more and more frequently, and details of his cruelty multiply more and more. Still there is no hint of any Tacitean persecution, of any connection with the great conflagration; on the contrary, such a connection is by implication emphatically excluded. At length in the 4th century it is suggested, in a fabricated correspondence, that Christians and Jews had been punished as incendiaries. At last in the 5th century we read the details in the terse Sulpicius, "the Christian Sallust." In the famous 44th chapter of the Annals of Tacitus we find still greater elaboration. The suggestion seems irresistible that the chapter represents an advanced stage of a process that had been slowly at work for hundreds of years. Are not such evolutions familiar to the student of history? Does he hesitate to recognize them when much less clearly revealed in profane records? Do not precedents for such interpolations abound? Was there not the strongest motive and even temptation to give historic color to the whole Christian doctrine; espe-

cially to its central concept, the Jesus? Does not even Tertullian (in the passage quoted in *The Monist*, p. 531) dare to represent Tiberius as convinced by "intelligence from Syria Palestine"? Does not Justin (A. I, 35, 48) still earlier appeal to a fictive official report of the trial of Jesus?[1] In fact, unless I widely err, this strain towards historization, especially in the Western church, has been the main determinant of old Christian literature and dogma.

10. In conclusion, a few minima. Dr. K. does not like a certain parenthesis of mine "(who are much higher than deep)," which he thinks offensive to "higher critics." Now I yield to no one in genuine admiration of these critics and would be the last to violate propriety in speech about them. But such disquisition is at best exceeding dry, even repellent, and in mercy to the reader it seemed admissible to interject an occasional bit of good-natured humor. However, if yielding to such rare impulse to lay aside high seriousness for the moment seems likely to wound any one's feelings, I shall firmly resist it and make my discourse as solemn and severe as the sternest could desire.

As to the great harm which Dr. K. fears the new notions may do liberal criticism, it may be suggested that criticism was made for the truth and not the truth for criticism. If the liberal contentions are sound, no form nor fashion of research can really harm them; if unsound, no amount of homage or advocacy can ultimately save them.

Instead of lumping the investigations of Bauer, Kalthoff, and many others with my own, it would seem juster to distinguish things that differ. Dr. K. should know from careful reading (which may often check cavils that careless reading has started) that neither in method nor in spirit nor in results is there any such likeness as would justify such classification, which not even German critics would employ or approve.

COMMENTS AND ADDENDA BY MR. KAMPMEIER.

1. The weight of the Sulpician passage on the festivities of Nero has been entirely overlooked. If this passage (though not dealing with the persecution) was taken almost verbatim from Tacitus, why can't the passage on the persecution be a copy from him? I beg to compare both passages closely.

2. That part of the Clemens passage speaking of women martyrs reads: "On account of zeal women were persecuted, who, Dan-

[1] ἐκ τῶν ἐπὶ Ποντίου Πιλάτου γενομένων ἄκτων.

aids and Dirkae, suffering horrible and impious treatment, arrived at the goal of the race of faith and obtained glorious honor, though being weak in body." I simply left out the two words, for the omission of which I am criticized, because I did not wish to go into unimportant detail, as I only cited the Clemens passage very generally anyway. I am now sorry for not having given it fully; it would have strengthened my position the more. The two words perhaps refer to a peculiar treatment some women suffered in the persecution mentioned by Clemens.

3. In the James passage not only the disputed words must be taken into consideration, but the whole passage following, which states that James and others were accused and stoned by Ananus as "breakers of the law," and that the most equitable of the citizens, disliking what was done, protested through King Agrippa (the personal friend of Josephus) against the procedure of the high priest before the new Roman governor Albinus. Schürer only suspects the James passage because Josephus otherwise is silent on Christianity. But this is no valid reason.

4. Dr. Smith does not notice that by now saying the mother and brethren of Mark iii. 31, "standing without," symbolize the Jews in their rejection of the Jesus cult he entangles himself more and more, since in his previous article he spoke of the brothers of Jesus and Cephas as only spiritual brothers.

5. In regard to the number 666 I do not see any necessity of receding yet from the *zeitgeschichtliche* position. As long as the Jewish and Christian Sibyllines are full of instances in which historical persons are designated by numbers, I cling to the position that 666 can likewise denote an historical person. Book XIV of the Sibyllines designates a whole row of Roman emperors by numbers. Does Gunkel really declare "*die zeitgeschichtliche Erklärung bankerott*" in every detail? According to his article (*Monist,* April 1903) he of course leads much of the language of Revelation back to primitive myths, in which I fully agree with him, but does this exclude any reference to contemporary history? There is repeated reference to Rome, "the great city" in chaps. xiii-xviii. In xvii. 9 Rome is designated as sitting on seven hills, and then follows the mention of seven kings, one of which, says the seer, will be the beast, "that was, and is not, even he is the eighth."

6. The passage in *Ascensio Jesajae* says: "Beliar, the great prince, the king of this world, will appear in the form of a man, an unjust king, a matricide. [Nero is repeatedly referred to in the

Sibyllines as matricide] who will persecute the plantation, which the twelve apostles of the beloved have planted and of the twelve one will be given into his hands." I hope Dr. Smith will not deny the great prevalence of the Nero-*redivivus* legend in early Christian circles.

7. Furneaux aptly remarks that the statement of Suetonius concerning the punishment of Christians occurs among a whole list of police regulations for which Nero is commended. This may account for the short wording.

8. As the tilt between Dr. S. and myself may fall into the hands of some who know me personally, I will say that I lay no claim to either a Ph. or D.D., for which my opponent erroneously assumes me.

A. K.

REMARKS ON DR. CARUS'S VIEW CONCERNING GEOMETRY.

In an interesting essay published in *The Monist* of January, 1910, Dr. Carus has attempted to explain the nature of mathematical thought. Putting aside other points, he has mainly endeavored therein to establish "the foundation of geometry without resorting to axioms," which we could not but receive with hearty approval and close attention, because hitherto we have been compelled to proceed with some set or other of axioms, or rather assumptions, as we prefer to call them. If we could ever do away with them, how glad we would be! Nothing else in the domain of mathematics,—nay of any subject in the entire scope of science, could ever afford greater satisfaction to our esthetic requirements by which we are seeking simplicity in our scientific thought. But the case is not simple. We must first enter into a critical examination before we can give assent or dissent to this enticing view of Dr. Carus.

On page 50 of his article we read: "If my conception of mathematics is true we do not need in geometry a certain number of primitive ideas supposed incapable of definition, and a certain number of primitive propositions or axioms, supposed to be incapable of proof."

All this would be very well if it were really true as Dr. Carus maintains. In his Conclusion he feels confident that he has "furnished a conception which satisfies all demands and will be conceivable for all practical purposes," and further that "in the main (his) solution is on the right track." But in spite of all he has said we are compelled to doubt whether he is certainly right. Mathe-

maticians who are interested in the philosophical considerations of their subject would perhaps not be readily persuaded that their theoretical demands have been satisfied by this conception thus prominently set forth by a celebrated philosopher.

If Dr. Carus desires to do away with all axioms, he must base his considerations upon something, or however gifted he be in the art of thinking, he could not build his castle entirely in the air. Thus a cornerstone of his construction lies in his conception of motion. On pp. 37-38 he says:

"We cancel in thought everything particular which comprises all things concrete, be they of matter or energy, and retain only our mental faculty of doing something, including a field of action implied by the possibility of moving about."

Here Dr. Carus has unconsciously introduced an assumption or assumptions. Does he not assume "the possibility of moving about"? The form of his assumption becomes exceedingly clear when he says: "We can move in any direction and everywhere without end" (pp. 39-40). Moreover this statement is not a single assumption only, but it contains a group of assumptions.

Of the numerous assumptions Dr. Carus has tacitly made in the course of his argument, we shall content ourselves to point out a single one. He says on page 40, that "we can draw straight lines in different directions." It is clear that this statement implies an assumption. We shall not speak of various primitive ideas employed by Dr. Carus, that appear to us to be incapable of definition, and stated without any attempt at description.

"Mathematics is a creation of pure thought," Dr. Carus rightly remarks (p. 34). "We do not find a plane anywhere in actual life, we construct it; and in the same sense straight lines and right angles are the products of our construction" (p. 41). All these statements recommend themselves to us as very just, but Dr. Carus does not seem to be always considering geometry in such a purely *a priori* way. In his opinion, "motion is indispensable for any space conception" (p. 72). But what is motion as he conceives it? Does it not seem to be more "concrete" than to be a "pure thought"? It may well answer for the orientation of our conception of a physiological space; it is nevertheless not always necessary for our purely mental construction of mathematical space, as we can see in the different systems actually established by various mathematicians.

He says further (p. 74) that "after all, our notion of space is ultimately based on the self-observation of our own motion; (and)

without motion no space-conception." This may be very true, and we are highly interested with the deep significance of the statement. But it applies only when we have to investigate the origin of our space-conception; it is not positively necessary in our *a priori* construction of any system of geometry. At any rate the idea of motion need not be very conspicuous in such a construction. His statement is of profound significance only with reference to the statement: "Our notion of space is ultimately based on our senses. Without senses no space-conception."

Despite all that, however, Dr. Carus maintains (p. 74), "Pure mathematics does not depend upon the senses but is the product of the mind." If this is so, will it not be possible for us also to form our purely formal conception of space in our mind without resorting to any notion of motion, however conspicuously the latter may have contributed in originating the notion of space in the more or less physiological ground of the formation? This is certainly the reason why motion has not played a conspicuous part in the construction of the now existing systems of geometry.

It is true, that Dr. Carus does not refer to real motion, for on pages 71-72 he says, "This general idea of motion....is not real motion, but the thought of motion." But it is very doubtful whether we are able to conceive lines, angles, triangles etc., as "the purely *a priori* constructions of it."

Notwithstanding all that he has said, I cannot help wondering, if he were not thinking in a more or less "concrete" manner, not in "pure thought" only? His notion is true perhaps "only so far as our physiological space-conception is concerned." In any case Dr. Carus is unknowingly prepossessed of a conception of space in a way analogous to the Euclidean system, which is endowed with something of objective concreteness. We shall hear what he himself says (p. 75):

"We are not able to visualize some of the non-Euclidean spaces, which means we cannot form definite sense-perceptions of them."

Here it appears he is assuming that Euclidean space has been ratified by our senses. Further he says on page 74:

"If rational beings, differing from ourselves, have developed on other planets, they might have different notions of physiological space than we have, but they would have the same logic, the same arithmetic, the same geometry, and all the complications derived therefrom."

It is very strange that Dr. Carus should consider there ought

to be only one geometry, whereas we have various systems. We who inhabit the surface of one and the same planet have already constructed different geometries, and so why should there not be a possibility of the inhabitants of other heavenly bodies constructing other systems than one of those common among us? There may be beings who have attained a much higher degree of evolution than we; their mental faculties may transcend ours in an incredible degree of perfection. Are we not then utterly incapable of even imagining what kind of space-conception they may have formed? Dr. Carus's position is too dogmatic when he uses such a statement as that above quoted.

As to arithmetic, there may be various systems, such as those, for instance, where the laws of association or commutation do not hold.

Dr. Carus says on page 46:

"But if space is a scope of motion, I cannot think of a space that is limited. Spherical space ought to be conceived as possessed of a spherical drift, but for that it ought to be infinite. If it is not infinite, I would ask the question, what is outside?"

Here the Euclidean space is most evidently predominating in the mind of the author, and in consequence he proves to be prejudiced in his considerations. A finite space is only finite; there need be nothing which would involve any conception requiring us to think of what is outside. If we could think of what is outside a finite space, the space would not be finite. Being prepossessed with the conception of the infinite Euclidean space in his mind he is little entitled, it appears, to truly conceive the intrinsic significance of a finite space.

If Dr. Carus says on page 49, "since....there are no points, lines, surfaces, planes, etc., in the objective world, it is obviously impossible to test the truth of Euclidean propositions by actual measurement," this would lead theoretically to the conclusion that any geometrical systems ever conceived in pure thought are all correct in their *a priori* significance. But if we were to consider space as finite and that the length of a whole straight line were not greater than the circumference of the earth's equator, for instance, although this might be logically very correct, it would never answer for practical purposes. If however geometrical systems are constructed to suit the demands of our actual life, we must make a selection as to the best system or systems that would be most convenient for our practical or concrete life. As a matter of course

pure mathematics has little or nothing to do with these things; but in order to secure the concrete application of geometrical systems we must first apply the *a posteriori* judgment of experience. Nothing obliges us to conclude that geometry is inapplicable to concrete purposes, because no such things as points, etc., are found in the actual world.

If the geometrical space be "a universe of pure thought" and yet "a model" serving "for any possible formation, fictitious or real," it would be only too evident that a model could be tested as to whether it would answer our purpose or not.

Dr. Carus condemns the tendency which he calls" experimentalism" met with in some mathematicians, who have raised questions such as these: 'Will not a straight line finally, after billions of miles, ...return into itself?' or, ...'Are the opposite angles in a parallelogram really equal?' or....'Is space Euclidean or non-Euclidean?'...." (pp. 34-35). Dr. Carus takes all these as proving "that those who propose them....do not understand anything of the foundations of mathematics" (p. 35). But here Dr. Carus, it seems, has confounded theoretical considerations with the practical applications of the theories. Some mathematicians, like Poincaré, think that every geometrical system has a significance for us, while others, among whom I may mention L. Harzer, believe otherwise, imagining that actual or objective space may be really limited. Which way of thinking is the better of the two, is a subject which we are not yet able to decide. When I speak in this way, Dr. Carus and his disciples may count me among those who do not understand the foundations of mathematics. I may well be among them; but in my opinion the question lies altogether outside of the domain of pure mathematics and only concerns the practical side of life. A logical construction and its practical application must not be confounded in any case.

For Dr. Carus "both objective existence and our thought...will be analogous" (p. 39), if consistency dominate both. This is certainly the positivist's view and can exercise little authority over those who are not upholders of the positivistic principles. There is consistency between objectivity and our thought, because the former is systematized by the latter. It is therefore not proper to conclude that both are analogous because consistency governs both.

It is very natural that Dr. Carus who is a positivistic philosopher should consider "the formal laws of the universe" as "a part of objective reality." But formal laws have no further significance for

us than as they are developed in our subjectivity. The idea is as absurd as if we should say that the number three is a part of a group of three persons. Three is not in any way comparable with three persons.

Dr. Carus is very right when he says (p. 63):

"The problems concerning the foundations of geometry and of mathematics in general are by no means so definitely settled that one solution may be said to have acquired the concensus of the competent, and for this reason I feel that a little mutual charity is quite commendable."

Thus, if I may differ somewhat in opinion from Dr. Carus, I must openly beg his charity for advocating my own views against him. I may have been led to these discussions "by an enthusiasm as strong as the zeal of religious devotees which....has a humorous aspect," but I am of the firm belief that they will perchance "serve to widen the horizon of his views," although not endowed with the positive power of "reversing, antiquating or abolishing the assured accomplishment" of Dr. Carus.

With us it is *never* "strange that the nature of man's rationality is by no means universally recognized." It seems very natural that "opinions vary greatly concerning its foundation and its origin." We are quite satisfied with the coexistence of various different systems, and so we shall be always happy to receive varying criticisms.

YOSHIO MIKAMI.

OHARA IN KAZUSA, JAPAN, March, 2, 1910.

EDITORIAL COMMENT.

On a first perusal of Mr. Yoshio Mikami's criticism of my views concerning the foundations of geometry, I thought that no reply would be needed for any one who has read my main expositions of the problem, the article in question as well as my books *Kant's Prolegomena* and *The Foundations of Mathematics*. But I am anxious to let every criticism receive consideration, and so I take pleasure in publishing Mr. Mikami's remarks. Since, however, many of our readers have not read the writings under discussion, I will briefly point out why Mr. Mikami's arguments fail to apply to my position.

It is true enough that I propose to lay the foundation of geometry without having recourse to axioms. However I have not for that reason, as Mr. Mikami says, "unconsciously introduced an assumption or assumptions," but I build all the formal sciences upon the facts of our own existence. In doing so I simply follow the

genetic process of mathematical conceptions. "Mathematical conceptions did not originate through assumptions or arbitrarily invented axioms but like the idea of numbers they are due to abstraction, and they originated naturally in the course of the evolution of the human mind at a certain period when man was ready for them.

We cannot construct anything from nothing. The idea of building mathematics on emptiness is unjustified, but I claim that the method as well as a field of action were procured together with its definite purpose at the time of its origin by the needs of the situation. And it is rather strange that this simplest method of investigating the genesis of mathematics has not yet been attempted for laying its philosophical foundation. Here Mr. Mikami has utterly failed to understand my position, and I wonder that he criticised me so boldly while he is unfamiliar with the most important arguments which I have tried to impress upon my readers.

The domain of mathematics is a field of anyness, and so long as Mr. Mikami omits the very mention of this conception, he will be incapable of understanding, let alone criticizing, my position. The very word "anyness" throws a flood of light upon the problem and helps us to solve it. As soon as man learns to speak, he can discriminate between concrete and abstract things. He generalizes and speaks of qualities which do not exist by themselves, and when he comes to generalize the purely formal aspects of experience he creates notions which do not apply to one concrete object alone but to any object, and thus acquire a universal significance. This possibility of thinking in terms of anyness is the foundation of all science and especially of the formal sciences.

Bodily forms are concrete, but pure forms are of an abstract nature; they are mental constructions. Pure form is purely relational; it is a matter of arrangement, either succession or juxtaposition, and contains nothing which can be expressed in terms either of matter or energy.

The idea of form has been ultimately derived from experience, for there is nothing in the world of our senses which is not somehow endowed with form, and he who speaks of objects as being devoid of form denies the most obvious facts of our experience.

Experience furnishes the data of all our knowledge, and these data can be analyzed into the sense elements of feelings and their forms. The generalization of the idea of form leads to one very peculiar result, which is, that the constructions we make apply generally for any case of the same kind. The reason is simple enough.

Form is the most abstract quality which is common to all things, and so we characterize the purely formal as anyness. But there is another point to be noted. When dealing with sense experience we have always before us concrete and isolated cases, but in making constructions of pure form we can exhaust all possibilities and so we can be systematic. Instead of observing isolated cases we can formulate a general law, which means a description of the essential features of all possible cases. Here lies the significance of the purely formal sciences, and this is the reason why the nature of form is the fundamental problem of science and philosophy. The purely formal sciences furnish us with a general scheme excluding impossibilities, and are of such a nature as to permit us to arrange all possible cases systematically. If formal thought were not capable of furnishing such *a priori* systems, science would be impossible.

We have seen that the idea of anyness originated by abstraction, by dropping all features of concreteness, and we know that primitive man began purely formal operations, such as counting, by creating a system of reference in units. He counted heads of cattle on his fingers and he interrelated the objects to be counted with his names of units or with some mnemotechnic help which served him as an abacus. We cannot doubt that man originally used his fingers as a system of reference, though the essential things were not his concrete fingers but the idea of units which the fingers represented.

Accordingly arithmetic and in the same way geometry did not originate from nothing, but through abstraction by omitting those features of experience which at the moment were not wanted for the purpose of understanding a certain situation.

The mode of creating such systems of anyness is due to man's mental activity from which, however, anything concrete, be it matter or energy, has been excluded. In arithmetic this pure activity is a progress from point to point, thereby creating discrete units; in geometry, however, we trace continuous paths of our motion called lines. We start with our ability to do certain things; we limit our activity to the abstract field of anyness and then we proceed to make constructions of pure form. No assumptions nor axioms are needed, except the principle of consistency. And we may create the conditions as we please. We may build up a system of numerals or the plane of Euclidean geometry. We may think of any lines of the same size as equal, or we may also consider direction and treat lines as vectors.

In one sense anyness is nothing. It is a state of being devoid

of anything definite and concrete, but it is not, for that reason, absolutely nothing. The field of anyness possesses definite positive qualities, among which most significant is the quality of the absence of all peculiarity, which means that the same action taken now and here is the same as if taken at any other time or in any other place. The field of operation is throughout the same, and so constructions are different only if they have been made different. In arithmetic a unit is a unit whenever or wherever it is posited, and in geometry progress can be made in any direction and without any limitation, but the same figure will always be the same.

Note that the principle of action without further limitation involves the highly important concept of infinitude. The idea of a progress from unit to unit implies that wherever I stop I might continue, and there is a possibility of progressing to further units beyond any stopping place. It is strange that the idea of infinitude has been a stumbling block to the minds of many thinkers, profound as well as shallow, mystics as well as scientists, but I wish to say here that from my standpoint infinitude is the simpler concept, and finiteness a more complicated idea. The field of action without further limitation is a primitive idea in the fundamentals of mathematics, and so any kind of field of *a priori* activity will be infinite unless by a special assumption a limit is imposed upon the activity with which we start. However, we do not get rid of infinitude, even if we limit our field of operation and make it finite in one way or another, because the very idea of a limit is a boundary which implies a *cis* and a *trans*. If there is a boundary we postulate a beyond. Mr. Mikami does not recognize the logical necessity of this statement, for he speaks of spherical space, and complains that I introduce into my notion of spherical space the idea of Euclidean space with its infinitely straight line. But such is not the case. I only introduce a logical principle, for even if we have a spherical space we would have to determine the radius of the sphere, and here again we would have the choice of a radius from the infinitely small to the infinitely great, and a sphere of the radius of the infinitely great would again restore infinitude to its proper birthplace. If, however, we assume a spherical space of a definite radius, we have a very concrete case, and have left the field of anyness, which according to my conception of the foundations of mathematics is the fundamental idea without which we will be bewildered by a tangle.

Not having familiarized himself with my views of anyness, Mr. Mikami does not understand that our space-conception may

be ultimately based on experience, while in spite of it the construction of mathematical space is *a priori* and purely formal. He sees a contradiction in the two statements, "without motion no space-conception" and "pure mathematics does not depend upon the senses." Mr. Mikami declares that the former statement is tantamount to saying that "our notion of space is ultimately based upon our senses." Does he deny that we can make abstractions? I grant that in reality we can not produce "whiteness" as a thing by itself, or "motion-in-itself," a change of place without moving objects and devoid of energy. But in thought we can create such abstract ideas, and I claim that the whole field of mathematics is such an abstract conception which does not exist in objective reality; it is purely mental. Being a construction which purposely omits everything concrete, mathematics is devoid of sense elements. Experience, as I understand the word, consists of sense perceptions, and sense perceptions contain both elements, the sensual and the formal. By omitting the sensual we retain the idea of pure form, and so all systems of pure form are products of the mind, and are constructed by means of abstractions ultimately derived from experience.

Kant's transcendentalism is based on the argument that mathematical constructions are *a priori,* and so, Kant claims, they can not have been deduced from experience. He insists that they are the condition of all experiences, for experience becomes only possible by relying upon the purely formal sciences, including pure natural science which is based on the conception of causality. I can not look for causes or the effects of causes, unless I have in my mind the idea of the law of causation. These conditions of all experience Kant calls transcendental, and transcendental ideas, such as logic, arithmetic, geometry, or in a word reason, as well as the conceptions of time and space form the constitution of the human mind; but how mind originates Kant has never investigated.

I find fault with Kant's use of the term "experience" which he mostly restricts to the idea of sense experience but sometimes employs in the broader meaning of sense experience as guided by logic and other principles of formal thought. Mathematics has nothing to do with experience in the narrower sense, but the means of its construction have been derived by abstraction from experience in the broader sense. Accordingly my propositions do not involve a contradiction as Kantians would be inclined to think and as Mr. Mikami actually declares.

There is another point on which my view differs from that of

Kant. It is what he calls idealism, but which is truly subjectivism.

The domain of the mind is the realm of ideas, and so Kant concludes that time and space and reason (or in a word all branches of formal thought) are ideal, and he uses the term in contrast to real or objective. In truth he identifies the term "ideal" with "subjective," and thus he claims that forms appertain to the mind and not to the objective world. Here lies the fallacy of Kant. We must consider that there is no subject in itself. Every thinking subject is a concrete and real body moving about as an object in the objective world. A thinker considered as a subject is only the inner aspect of an objective personality, and this objective personality is as much a part and parcel of the objective world as any other object. The experience of a subject is due to the objective contact of a thinking being, and this contact is experienced, not in pure subjectivity but by its bodily and objective sense organs.

The experiences of a thinker are first of all part and parcel of his objective body as it moves and is moved about, as it pushes and is pushed, as it is exposed to objective contact, mechanical as well as chemical or electric, and otherwise in its relation in the objective world. Form accordingly, with its quality of relationship, of juxtaposition, of difference of structure, etc., is a feature of the objective world and the idea of form is its representation in the domain of subjectivity. Accordingly the evidence that form is purely subjective is not forthcoming and stands in contradiction to what we know about the nature of form. If form were purely subjective, we would be compelled to deny objectivity altogether.

The abstractions from which the purely formal sciences have been created have been derived from experience, and since at the same time the formal sciences serve a practical purpose, we must assume that the objective world contains features which somehow correspond to its fundamental conceptions. This is certainly borne out by experience, for the formal sciences are the most indispensable part of our cognition. Without them man would not be a rational being.

We have repeatedly insisted upon the truth that all mathematical sciences, logic as well as arithmetic, are ideal in the sense that they are mental constructions. There are no logarithms in the objective world, but only in our mind, and the same is true of our idea of purely formal motion. There are no numbers running about in the starry heavens nor in the world of chemical atoms. Nevertheless the objective world is so constructed that by counting and measuring

we can acquire an insight into its constitution. We can determine magnitudes, distances and other properties of objects, and that is all that is needed.

Human reason exists as reason only in the human brain, but there are features in the objective world which make it possible that the theorems of reason assist us in comprehending the conditions of things. This objective counterpart of human reason has been characterized as the cosmic world order. The Germans call it *Gesetzmässigkeit*, a word which we have translated by "lawdom," meaning a state which admits of a description in so-called laws of nature. Mathematics more than any other science, helps us to understand this lawdom of the objective world, and although mathematical conceptions are purely mental, although there are no trigonometrical ideas, no sines nor cosines, no algebraic formulas extant in the objective world, the theorems of mathematics, being constructed in the field of anyness, help us to understand any analogous products; and also to render possible thereby a comprehension of this real world of ours.

ON THE MAGIC CIRCLE.

In the author's article on "Mediæval Occultism" (*The Monist*, XVIII, 510) a suggestion was made to the effect that the magic circle which forms an integral part of all thaumaturgic ritual served to define or limit the magical environment. Further consideration on this matter combined with a study of Buddhist and Chinese occultism has led the author to extend the use of this circle to a considerable extent.

It has long been recognized among anthropologists that temples as the residences of supernal powers represent in miniature the universe, and it is not difficult to show that the circle, with two perpendicular diameters oriented, is also a very widely used symbol for the universe, so that the magus operates as it were within a universe of his own creation. This then is the thesis of the present article, and it may be defined more generally as follows:

"The magic circle is an essential feature of magical operations, and expresses symbolically the universe. Within this circle the magus by the processes of ritual evokes supernatural powers (as he conceives them to be) with a space relation to the corresponding positions in the physical universe and the ideal universe of occult philosophy.

In order to prove this statement it will be necessary to show that there is some certain relation between the circle, the real universe and the ideal universe of the magicians.

That there is a relation between the circle and the real universe follows immediately from the orientation. This feature is essential to the construction of the magic circle[1] and the cardinal points were marked by censers, lines and magical texts. There is an immediate analogy in the orientation of the Gilgals or Cromlechs of the Stone Age (as instanced at Avebury, Stonehenge and Karnak), the Babylonian Ziggurats, the Egyptian and Greek temples and Catholic churches.

The next and more important link in the chain is the establishment of a space relation between the real and the ideal universes. In early times the ideal universe was necessarily indistinguishable from the real, so that in the Babylonian and Egyptian cosmogonies the gods or spirits have a definite space relationship. To put it somewhat crudely, they were more or less defined by spherical coordinates! As beliefs developed together with practical experience, the ideal universe became independent of the real but nevertheless coexistent with it in space and occupying much the same position as in the primitive scheme. The process would seem to be analogous to that by which we conceive a man's body being inhabited by an ideal soul which coincides more or less exactly with that body in its space relations.

It may seem somewhat superfluous to attempt here to prove this space relationship of the occult world, since so much research has already been done in this direction and the idea is of itself acceptable, but there is a further wish on the author's part not only to prove this but also to exhibit this proof in relation to the main question of the discussion, i. e., the magic circle.

In at least four distinct cases in ancient thought is there to be found a connection between the apparent rotation of the heavens about the earth and the psychical and physical conditions of man. Among the Egyptians[2] the soul of man is likened to the Sun which rises in the East as Ptah from the land of the shades (Amentet) culminates in the south as the omnipotent Ra, dies in the west as Osiris, and passing through the underworld, completes the cycle. The identity of the dead with Osiris in the "Book of the Dead" is

[1] See the *Clavicula Salomonis*, the *Grimorium verum*, or the *Pentameron* of Peter d'Abano on this point.

[2] Wallis Budge, *The Mummy, Guide to the First and Second Egyptian Rooms, British Museum*, and *The Gods of Egypt*.

even more complete than that of the Christian with Christ, and the Egyptian name of the book may be translated as "Coming forth as Horus" without philological violence. The ideal universe then corresponds to the ecliptic in the year or the hour-circle in the day, and the heavenly beings with whom man has to do are located along that circle. The meridian passes through the Elysian fields in the south (in north latitudes) and through the abode of Death in the north. In early times doubtless this idea would be accentuated by travelers' reports of the cold of the north and the tropical luxuriance of the south.

The second is that of China. In the third chapter of the *Chou Yih (Yih Ching)* are given the famous "Eight Trigrams of Fu-Hsi"[3] and also his diagrams of the Sixty-Four Kwa. Both diagrams are arranged *in a circle* with *Chien,* the uncombined Yang (male principle), in the south,[4] and *Kwun,* the uncombined Yin (female principle), in the north. The intermediate values of the *Kwa Yao* (combinations of the Yin and Yang in groups of six) occupy positions round the circle roughly corresponding to their contents of Yin or Yang, i. e., those mostly Yin are towards the north and those mostly Yang towards the south. Although there is no mention of a circular motion (the Yih or change being supposed in creation to have proceeded by ramification like the Darwinian genealogical tree) the use of these circles and the name of Tai Yang (Great Yang) which is colloquially given to the Sun would imply that the *Ch'i* (Breath of the Universe) sweeps round the circle however the elements of the circle may have been produced. It may be noticed here that the legendary history of the Egyptian gods also proceeds on lines of biogenesis so that the two systems are quite analogous.

The third is the Buddhistic Wheel of Life.[5] This represents the universe as an ever revolving wheel in the clutches of the Beast of Desire (a tortoise in the Tibeto-Chinese diagrams).[6] At the hub are the three symbolical animals representing Ignorance, Lust and Anger, and in the six panels of the wheel are the various conditions of the universe. At the left above the horizontal spoke we

[3] See Dr. Carus, "Chinese Occultism," *Monist,* XV, 500; 21st, 24th and 25th pages of the Chinese version.

[4] At the top of the diagrams because the Chinese compass points south.

[5] See Waddell's *Buddhism in Thibet.* There is description of it also in Rudyard Kipling's novel *Kim.*

[6] This beast would seem to resemble the tortoise on whose back Fu-Hsi discerns the diagrams. See also Dr. Carus on P'an Ku in the article above referred to.

have the Human World, above this Heaven (the culmination), then descent through the realms of the Demi-Gods to the two Hells, and finally through the realm of the Tormented Spirits back to the Human world. The twelve Nidanas or links in the chain of causality (psychical) surround the wheel and are regarded as the source of its motion. It is to be presumed that the wheel revolves with regard to the man, or else we must consider the wheel as stationary and the soul revolving in it. Here again we have a solar analogy since the soul is born into human life on the horizontal line (the horizon), rises to the gods (in the zenith, or meridian altitude), dies on the horizon (corresponding to the west), descends to the hells (in the Nadir or meridian depression) and comes back to earth again. There may perhaps be some analogy in the traditional descent of Christ into hell whence he ascended to earth, and then to heaven.

The fourth is the astrological scheme. The *Schema Coeli* or figure of the heavens (commonly called the horoscope, i. e., a view of the heavens at a certain hour) is certainly very ancient. It is, the author believes, referred to in Ptolemy's *Tetrabiblos* and may possibly be derived from Egyptian astronomy.[7] Until recent years a square form was used for the table, but Lieutenant Morrison ("Zadkiel") introduced a circular form which more nearly corresponds to the astronomical measurements employed.

The astrologers divide the celestial sphere into twelve equal lunes which are defined by a series of twelve equal sectors on the prime vertical, the eastern horizontal being used as the origin and the angles measured anti-clockwise looking south (i. e., reverse to the earth's rotation and in the same direction as the motion of the planets in the ecliptic). These lunes are called the Houses, and each is given by the astrologers a particular relation to temporal affairs which are influenced correspondingly when the planets are situated therein. The ascendent or first house (just below the eastern horizon) is called that of Life, and the seventh (just above the western horizon), that of death. The fourth house (next to the meridian) is associated with the highest honors, and the opposite one, the tenth (next to the meridian below the horizon), with misfortunes. Here there is a perfect analogy between the motions of the celestial bodies and the ideal universe of man, and the grounds for the beliefs of the astrologers are identical with those for all forms of sympathetic

[7] See a very ingenious speculation of the late R. A. Proctor as to the astronomical use of the Great Pyramid in an early volume of *Knowledge*.

magic. The mediæval sorcerers undoubtedly drew much of their ritual from astrological sources, although the use of circles is not necessarily derived directly therefrom.[8]

These references should suffice to establish the connection between the oriented circle and the universe, and it only remains to show that the circle was knowingly employed in this sense, to completely prove the thesis.

In the text-books of mediæval magic there will frequently be found instructions to invoke from each quarter of the compass, or again to call certain spirits from a given direction. Such rules occur in the *Clavicula,* but in the absence of references the author cannot recollect the locus, nor can he give the names of other books although such instructions certainly appear in them.

The practice of the "eastward position" in churches, however, is alone sufficient to show that there is a traditional association of ideas of the kind sought. The practice of ceremonial processions with the Sun, such as is frequently to be observed in Catholic services, is an additional demonstration. If, however, we proceed further we shall only be retracing the ground which has been already covered by students of heliolatry.

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NOTES ON PANDIAGONAL AND ASSOCIATED MAGIC SQUARES.

The reader's attention is invited to the plan of a magic square of the thirteenth order shown in Fig. 1 which is original with the writer. It is composed of four magic squares of the fourth order, two of the fifth order, two of the seventh order, two of the ninth order, one of the eleventh order and finally the total square of the thirteenth order, thus making twelve perfect magics in one, several of which have cell numbers in common with each other.

To construct this square it became necessary to take the arithmetical series 1, 2, 3.... 169 and resolve it into different series capable of making the sub-squares. A close study of the constitution of all these squares became a prerequisite, and the following observations are in a large part the fruit of the effort to accomplish the square shown. This article is intended however to cover more particularly the constitution of squares of the fifth

[8] Note a mention of magic circles in Cicero, *De Divinatione.*

order. The results naturally apply in a large degree to all magic squares, but especially to those of uneven orders.

It has of course been long known that magic squares can be built with series other than the natural series 1, 2, 3.... n^2, but the perplexing fact was discovered, that although a magic square might result from one set of numbers when arranged by some rule, yet when put together by another method the construction would fail to give magic results, although the second rule would work all right with another series. It therefore became apparent that these rules were in a way only *accidentally right*. With the view of explaining

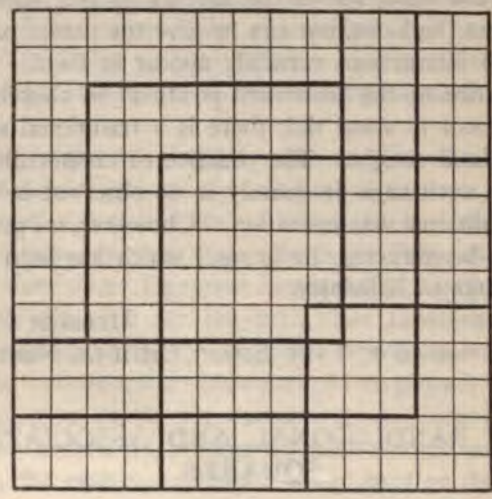

Fig. 1.

these puzzling facts, we will endeavor to analyze the magic square and discover, if possible, its *raison d'être*.

The simplest, and therefore what may be termed a "primitive" square, is one in which a single number is so disposed that every column contains this number once and only once. Such a square is shown in Fig. 2, which is only one of many other arrangements by which the same result will follow. In this square every column has the same summation (a) and it is therefore, in a limited sense, a magic square.

Our next observation is that the empty cells of this figure may be filled with other quantities, resulting, under proper arrangement, in a square whose every column will still have a constant summation. Such a square is shown in Fig. 3 in which every column sums

$a+b+c+d+g$, each quantity appearing once and only once in each row, column, and diagonal. These squares however have the fatal defect of duplicate numbers, which can not be tolerated. This defect can be removed by constructing another primitive square, of five other numbers (Fig. 4), superimposing one square upon the

Fig. 2.

Fig. 3.

Fig. 4.

other, and adding together the numbers thus brought together. This idea is De la Hire's theory, and it lies at the very foundation of magical science. If however we add a to x in one cell and in another cell add them together again, duplicate numbers will still result, but this can be obviated by making the geometrical pattern in one square the *reverse* of the same pattern in the other square. This idea is illustrated in Figs. 3 and 4, wherein the positions of a and v are reversed. Hence, in the addition of cell numbers in two such squares a series of diverse numbers must result. These series are necessarily magical because the resulting square is so. We can now lay down the first law regarding the constitution of magical series, viz., *A magic series is made by the addition, term to term, of x quantities to x other quantities.*

As an example, let us take five quantities, a, b, c, d and g, and add them successively to five other quantities x, y, s, t and v, and we have the series:

$a+x$	$a+y$	$a+s$	$a+t$	$a+v$
$b+x$	$b+y$	$b+s$	$b+t$	$b+v$
$c+x$	$c+y$	$c+s$	$c+t$	$c+v$
$d+x$	$d+y$	$d+s$	$d+t$	$d+v$
$g+x$	$g+y$	$g+s$	$g+t$	$g+v$

This series, with *any values* given to the respective symbols, will produce magic squares if properly arranged. It is therefore a *universal series*, being convertible into any other possible series.

We will now study this series, to discover its peculiar properties if we can, so that hereafter it may be possible at a glance to

determine whether or not a given set of values can produce magical results. First, there will be found in this series a property which may be laid down as a law, viz.:

There is a constant difference between the homologous numbers of any two rows or columns, whether adjacent to each other or not. For example, between the members of the first row and the corresponding members of the second row there is always the constant difference of $a - b$. Also between the third and fourth rows there is a constant difference $c - d$, and between the second and third columns we find the constant difference $y - s$ etc., etc. Second, it will be seen that any column can occupy any vertical position in the system and that any row could exchange place with any other row. (As any column could therefore occupy any of five positions in the system, in the arrangement of columns we see a total of

$$5 \times 4 \times 3 \times 2 \times 1 = 120 \text{ choices.}$$

Also we see a choice of 120 in the rows, and these two factors indicate a total of 14,400 different arrangements of the 25 numbers and a similar number of variants in the resulting squares, to which point we will revert later on.)

This *uniformity of difference* between homologous numbers of any two rows, or columns, appears to be the *only essential* quality of a magical series. It will be further seen that this must necessarily be so, because of the process by which the series is made, i. e., the successive addition of the terms of one series to those of the other series.

As the next step we will take two series of five numbers each, and, with these quantities we will construct the square shown in Fig. 5 which combines the two primitives, Figs. 3 and 4.

By observation we see that this is a "pure" square, i. e., in no row, column, or diagonal is any quantity *repeated* or *lacking*. Because any value may be assigned to each of the ten symbols used, it will be seen that this species of square depends for its peculiar properties *upon the geometrical arrangement of its members and not on their arithmetical values*; also that the five numbers represented by the symbols a, b, c, d, g, need not bear any special ratio to each other, and the same heterogeneity may obtain between the numbers represented by x, y, s, t, v.

There is however another species of magic square which is termed "associated" or "regular," and which has the property that the sum of any two diametrically opposite numbers equals twice

the contents of the central cell. If we suppose Fig. 5 to be such a square we at once obtain the following equations:

$$(1) \quad (d+s)+(d+x)=2d+2y \;\therefore\; x+s=2y$$
$$(2) \quad (d+t)+(d+v)=2d+2y \;\therefore\; t+v=2y$$
$$(3) \quad (c+y)+(g+y)=2d+2y \;\therefore\; c+g=2d$$
$$(4) \quad (a+y)+(b+y)=2d+2y \;\therefore\; a+b=2d$$

Hence it is evident that if we are to have an associated square, the element d must be an arithmetical mean between the quantities c and g and also between a and b. Also, y must be a mean between x and s, and between t and v. It therefore follows that an associated square can only be made when the proper *arithmetical relations* exist between the numbers used, while the construction of a continuous or pandiagonal square depends upon the *method of arrangement* of the numbers.

a z	b y	c s	d t	g v
d s	g c	a v	b x	c y
b v	c x	d y	g s	a t
g y	a s	b t	c v	d z
c t	d v	g x	a y	b s

Fig. 5.

1	23	137	223	263
167	229	191	7	53
197	37	83	173	157
89	101	163	227	67
193	257	73	17	107

Fig. 6.

163	257	1	53	173
227	73	23	167	157
67	17	137	229	197
89	107	223	191	37
101	193	267	7	83

Fig. 7.

The proper relations are embraced in the above outline, i. e., that the *central term of each of the five (or x) quantities shall be a mean between the diametrically opposite pair.* For example, 1.4.9.14.17, or 1.2.3.4.5, or 1.2.10.18.19, or 1.10.11.12.21 are all series which, when combined with similar series, will yield magical series from which associated magic squares may be constructed.

The failure to appreciate this distinction between pandiagonal and associated squares is responsible for much confusion that exists, and because the natural series $1.2.3.4.\ldots.n^2$ *happens,* as it were, accidentally to be such a series as will yield associated squares, *empirical rules have been evolved for the production of squares which are only applicable to such a series,* and which consequently fail when another series is used. For example, the old time Indian rule of regular diagonal progression when applied to a *certain class* of series will yield magic results, but when applied to another class of series it fails utterly!

As an example in point, the following series, which is composed of prime numbers, will yield the continuous or nasik magic square shown in Fig. 6, but a square made from the same numbers arranged according to the old Indian rule is not magic in its diagonals as shown in Fig. 7.

1	7	37	67	73
17	23	53	83	89
101	107	137	167	173
157	163	193	223	229
191	197	227	257	263

The fundamentally *partial* rules, given by some authors, have elevated the *central row* of the proposed numbers into a sort of axis on which they propose to build. This central row of the series is thrown by their rules into one or the other diagonal of the completed square. The fact that this central row adds to the correct summation is, as before stated, simply an accident accruing to the normal series. The central row does *not* sum correctly in many magical series, and rules which throw this row into a diagonal are therefore incompetent to take care of such series.

Returning to the general square, Fig. 5, it will be seen that because each row, column and diagonal contains every one of the ten quantities composing the series, the sum of these ten quantities equals the summation of the square. Hence it is easy to make a square whose summation shall be any desired amount, and also at the same time to make the square contain certain predetermined numbers.

For example, suppose it is desired to make a square whose summation shall be 666, and which shall likewise contain the numbers 6, 111, 3 and 222. To solve this problem, two sets of five numbers each must be selected, the sum of the two sets being 666, and the sums of some members in pairs being the special numbers wished. The two series of five numbers each in this case may be

3		0
6		108
20		216
50		100
100		63
179	+	487 = 666

from which by regular process we derive the magic square series

3	6	20	50	100
111	114	128	158	208
219	222	236	266	316
103	106	120	150	200
66	69	83	113	163

containing the four predetermined numbers. The resulting magic square is shown in Fig. 8, the summation of which is 666 and which is continuous or pandiagonal. As many as eight predetermined numbers can be made to appear together with a predetermined summation, in a square of the fifth order, but in this case duplicate numbers can hardly be avoided if the numbers are selected at ran-

3	114	236	150	163
266	200	66	6	128
69	20	158	316	103
208	219	106	83	50
120	113	100	111	222

Fig. 8.

1	59	8	15	19
14	12	13	21	42
33	4	48	11	6
45	5	26	16	10
9	22	7	39	25

Fig. 9.

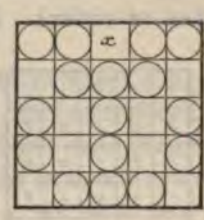

Fig. 10.

dom. We may go still further and force four predetermined numbers into four certain cells of any chosen column or row as per following example:

A certain person was born on the 1st day of the 8th month, was married at the age of 19, had 15 children and is now 102 years old. Make a pandiagonal square whose S = 102 and in which numbers 1, 8, 15, 19 shall occupy the first, third, fourth and fifth cells of the upper row.

Referring to the universal square given in Fig. 5,

Let $a = 0$	$x = 1$
$c = 3$	$s = 5$
$d = 9$	$t = 6$
$g = 6$	$v = 13$

These eight quantities sum 43, so that the other pair (b and y) must sum 59, $(43 + 59 = 102)$. Making therefore $b = 20$ and $y = 39$, and replacing these values in Fig. 5, we get the desired square shown in Fig. 9.

As previously shown, continuous squares are dependent on the geometrical placing of the numbers, while associated squares depend also upon the arithmetical qualities of the numbers used. In this connection it may be of interest to note that *a square of third order can not be made continuous,* but *must be associated*; a square of the fourth order may be made *either continuous or associated, but can not combine these qualities*; in a square of the fifth order *both qualities may belong to the same square.* As shown in my article in *The Monist* for July, 1909, very many continuous or nasik squares of the fifth order may be constructed, and it will now be proven that associated nasik squares of this order can only be made in fewer numbers.

In a continuous or "pure" square each number of the sub-series must appear once and only once in each row, column, and diagonal (broken or entire). Drawing a square, Fig. 10, and placing in it

Fig. 11.

Fig. 12.

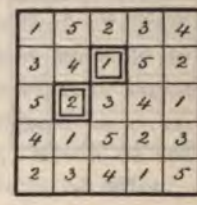

Fig. 13.

an element x as shown, the cells in which this element *can not* then be placed are marked with circles. In the second row only two cells are found vacant, thus giving only two choices, indicating two forms of the square. Drawing now another square, Fig. 11, and filling its first row with five numbers, represented by the symbols t, v, x, y and s, and choosing one of the two permissible cells for x in the second row, it will be seen that there can be but *two* variants when once the first row is filled, the contents of every cell in the square being forced as soon as the choice between the two cells in the second row is made for x. For the other subsidiary square, Fig. 12, with numbers represented by the symbols a, b, c, d and g, there is *no choice,* except in the filling of the first row. If this row is filled, for example, as shown in Fig. 12, all the other cells in this square *must* be filled in the manner shown in order that it may fit Fig. 11.

Now, therefore, taking the five symbols x, y, s, t, v, any one of them may be placed in the first cell of the first line of Fig. 11.

For the second cell there will remain a choice of four symbols, for the third cell three, for the fourth cell two, for the fifth cell no choice, and finally in the second line there will be a choice of two cells. In the second subsidiary there will be, as before, a choice of five, four, three and finally two, and no choice in the second row. Collecting these choices we have $(5\times4\times3\times2\times2)\times(5\times4\times3\times2)=28{,}800$, so that exactly 28,800 continuous or nasik squares of the fifth order may be made from any series derived from ten numbers. Only one-eighth of these, or 3600, will be really diverse since any square shows eight manifestations by turning and reflection.

The question now arises, how many of these 3600 diverse nasik squares are also associated? To determine this query, let us take the regular series 1.2.3....25 made from the ten numbers

1	1	3	4	5
0	5	10	15	20

Making the first subsidiary square with the numbers 1.2.3.4.5, (Fig. 13) as the square is to be associated, the central cell must contain the number 3. Selecting the upward left-hand diagonal to work on, we can place either 1, 2, 4 or 5 in the next upward cell of this diagonal (a choice of four). Choosing 4, we *must* then write 2 in its associated cell. For the upper corner cell there remains a choice of two numbers, 1 and 5. Selecting 1, the location of 5 is forced. Next, by inspection it will be seen that the number 1 may be placed in either of the cells marked □, giving two choices. Selecting the upper cell, every remaining cell in the square becomes *forced*. For this square we have therefore only

$$4\times2\times2=16 \text{ choices.}$$

For the second subsidiary square Fig. 14 the number 10 must occupy the central cell. In the left-hand upper diagonal adjacent cell we can place either 0, 5, 15 or 20 (four choices). Selecting 0 for this cell, 20 becomes fixed in the cell associated with that containing 0. In the upper left-hand corner cell we can place either 5 or 15 (two choices). Selecting 15, 5 becomes fixed. Now we can not in this square have any further choices, because all other 15's *must* be located as shown, and so with all the rest of the numbers, as may be easily verified. The total number of choices in this square are therefore $4\times2=8$, and for both of the two subsidiaries, $16\times8=128$. Furthermore, as we have seen that each square has eight manifestations, there are really only $^{128}/_{8}=16$ *different plans*

of squares of this order which combine the associated and nasik features.

If a continuous square is expanded indefinitely, any square block of twenty-five figures will be magic. Hence, with any given square, twenty-five squares may be made, only one of which can be associated. There are therefore $16 \times 25 = 400$ variants which can be made according to the above plan. We have however just now shown that there are 3600 different plans of continuous squares of this order. Hence it is seen that only one plan in nine ($^{3600}/_{400} = 9$) of continuous squares can be made *associated* by shifting the lines and columns. Bearing in mind the fact that eight variants of a square may be made by turning and reflection, it is interesting to note that if we wish a square of the fifth order to be both associated and continuous, we can locate unity in any one of the four cells marked □ in Fig. 15, but by no constructive process can the de-

15	10	5	0	20
5	0	20	15	10
20	15	10	5	0
10	5	0	20	15
0	20	15	10	5

Fig. 14.

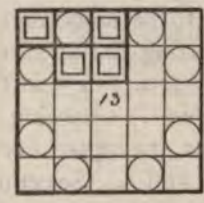

Fig. 15.

1	47	6	43	5	48
35	17	30	21	31	16
36	12	41	8	40	13
7	45	2	49	3	44
29	19	34	15	33	20
42	10	37	14	38	9

Fig. 16.

sired result be effected, if unity is located in any cells marked ○. Then having selected the cell for 1, the cell next to 1 in the same column with the central cell (13) must contain one of the four numbers 7, 9, 17, or 19. The choices thus entailed yield our estimated number of sixteen diverse associated nasik squares, which may be naturally increased eight times by turning and reflection.

That we must place in the same row with 1 and 13, one of the four numbers 7, 9, 17, or 19 is apparent when it is noted that of the series

1	2	3	4	5
0	5	10	15	20

having placed 3 and 10 in the central cells of the two subsidiaries, and 0 and 1 in two other cells, we are then compelled to use in the same line either 5 or 15 in one subsidiary and either 2 or 4 in the

other subsidiary, the combination of which four numbers affords only 7 and 17, or 9 and 19.

With these facts now before us we are better prepared to construct such squares as in which only prime numbers are used, etc. Reviewing a list of primes it will be seen that every number excepting 2 and 5 ends in either 1, 3, 7 or 9. Arranging them therefore in regular order according to their terminal figures as

1 11 31 41
3 13 23 43
7 17 37 47 etc.

we can make an easier selection of desired numbers.

A little trial develops the fact that it is impossible to make five rows of prime numbers, showing the same differences between every row, or members thereof, and therefore a *set* of differences must be found, such as 6, 30, 30, 6 (or some other suitable *set*). Using the above set of differences, the series of twenty-five primes

137	13	23	147	109	31	111	138	36	66	102	100	72
145	25	17	153	61	139	59	32	134	104	68	98	70
16	154	144	26	57	56	30	112	136	99	103	60	110
22	148	156	14	113	114	140	58	34	65	71	133	37
97	73	94	76	151	18	21	89	146	135	35	29	141
79	91	78	92	27	82	150	155	11	63	107	33	137
74	96	75	95	143	159	15	20	88	115	55	101	69
90	80	93	77	19	24	81	149	152	54	116	103	67
164	6	3	167	85	142	158	12	28	64	106	108	62
7	163	168	86	1	132	44	39	125	50	48	118	124
162	8	84	2	169	38	126	131	45	120	122	52	46
5	83	161	10	166	129	43	40	128	123	117	49	51
87	165	9	160	4	41	127	130	42	47	53	121	119

Fig. 17.

shown on page 146 may be found. In this series it will be seen that similar differences exist between the homologous numbers of any row, or column, and it is therefore only necessary to arrange the numbers by a regular rule, in order to produce the magic square in Fig. 6.

These facts throw a flood of light upon a problem on which

gallons of ink have been wasted, i. e., the production of pandiagonal and regular squares of the sixth order. It is impossible to distribute six marks among the thirty-six cells of this square so that one and only one mark shall appear in every column, row and diagonal. Hence a *primitive* pandiagonal magic square of this order is excluded by a geometrical necessity. In this case the natural series of numbers is not adapted to construct pandiagonal squares of this order. That the difficulty is simply an arithmetical one is proven by the fact that 6×6 pandiagonal squares can be made with *other series,* as shown in Fig. 16. We are indebted to Dr. C. Planck for this interesting square which is magic in its six rows, six columns and twelve diagonals, and is also four-ply and nine-ply, i. e., any square group of four or nine cells respectively, sums four or nine times the mean. It is constructed from a series made by arranging the numbers 1 to 49 in a square and eliminating all numbers in the central line and column, thus leaving thirty-six numbers as follows:

1	2	3	5	6	7
8	9	10	12	13	14
15	16	17	19	20	21
29	30	31	33	34	35
36	37	38	40	41	42
43	44	45	47	48	49

Fig. 17 shows the completed square which is illustrated in skeleton form in Fig. 1. All the sub-squares are faultless except the small internal 3×3, in which one diagonal is incorrect.

FRIERSON, LA. L. S. FRIERSON.

TWO MORE FORMS OF MAGIC SQUARES.

SERRATED MAGIC SQUARES.

The curious form of magic squares, which is to be described here, is a style possessing a striking difference from the general form of magic squares.

To conform with the saw-tooth edges of this class of squares, I have ventured to call them "serrated" magic squares.

A square containing the series 1, 2, 3, 4,....41 is shown in Fig. 1. Its diagonals are the horizontal and vertical series of nine numbers, as A in Fig. 2. Its rows and columns are zigzag as

shown at B, and are sixteen in number, a quantity which is always equal to the number of cells which form the serrations.

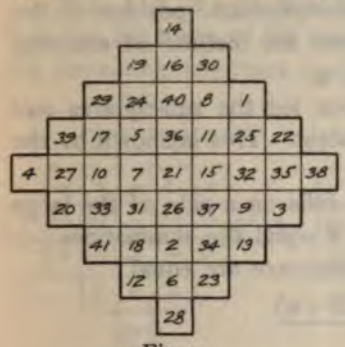

Fig. 1.

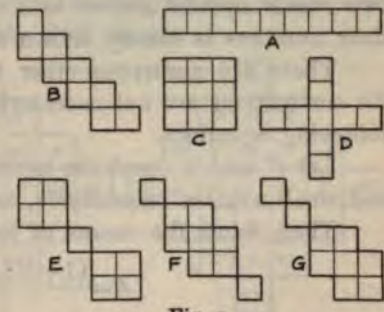

Fig. 2.

All of this class of squares must necessarily contain the two above features.

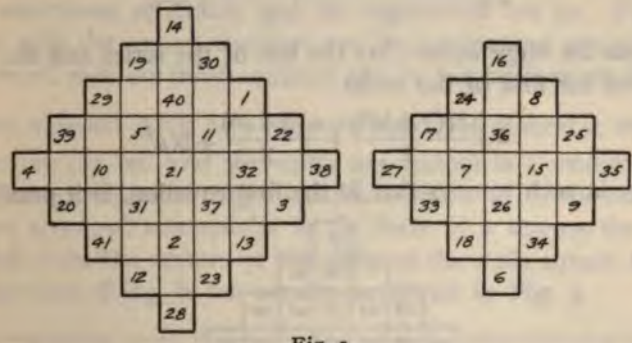

Fig. 3.

But, owing to its Nasical formation, Fig. 1 possesses other features as follows:

1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18
19	20	21	22	23	24	25	26	27
28	29	30	31	32	33	34	35	36
37	38	39	40	41				

Fig. 4.

There are nine summations each of the square and cruciform, as at C and D in Fig. 2, the centers of which are 40, 11, 32, 5, 21,

37, 10, 31 and 2 respectively. Of E and F there are six summations each, and of the form G there are twelve summations.

This square was formed by the interconcentric position of the two Nasik squares shown in Fig. 3, and the method of selecting their numbers is clearly shown in Fig. 4.

There are numerous other selections for the sub-squares and the summations are not necessarily constant. This is shown by the following equations.

Let N and n equal the number of cells on a side of the large and small squares respectively, and let Σ equal the summations.

Then, when the means of each sub-square are equal

$$\Sigma = \frac{(1+N^2+n^2)(N+n)}{2}$$

When the large square has the first of the series and the small square has the last of the series

$$\Sigma = \frac{N(1+N^2)}{2} + \frac{n(1+n^2)}{2} + N^2 n$$

When the large square has the last of the series and the small square has the first of the series

$$\Sigma = \frac{N(1+N^2)}{2} + \frac{n(1+n^2)}{2} + N n^2$$

Only in such squares that fit the first equation, is it possible to

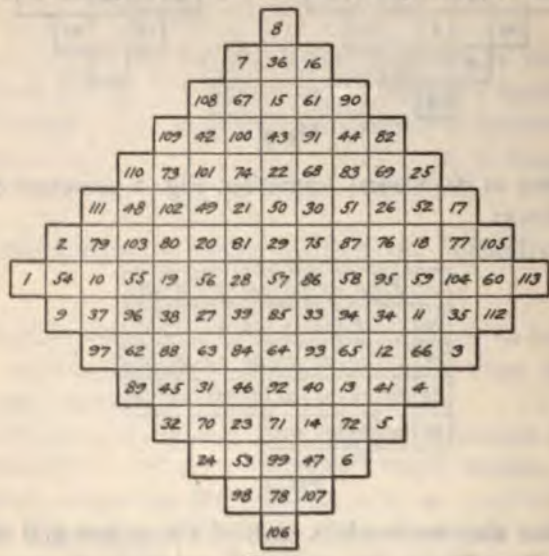

Fig. 5.

have complementary pairs balanced about the center; in other words known as regular or associated squares.

Fig. 5 is one of this class and has summations of 855. In this case the mean of the series was used in the 7×7 sub-square and the remaining extremes made up the 8×8 square.

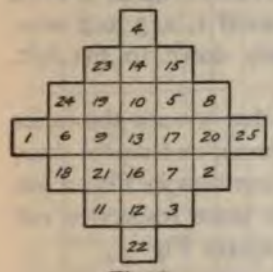

Fig. 6.

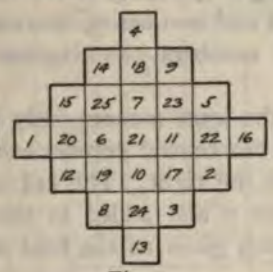

Fig. 7.

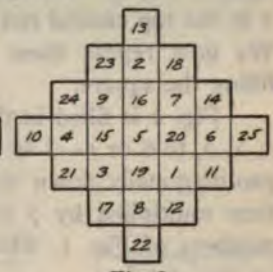

Fig. 8.

Figs. 6, 7, and 8 are the smallest possible examples of serrated squares. Fig. 6 is regular and is formed with the first of the above mentioned equations, and its summations are 91. Fig. 7 is formed with the second equation and its summations are 97. Fig. 8 is formed with the third equation and its summations are 85.

MAGIC SQUARES WITH THE ODD NUMBERS IN SEQUENTIAL SERIES.

During the last year the writer has noticed in a weekly periodical, a few examples of magic squares in which all of the odd numbers are arranged sequentially in the form of a square, the points of which meet the centers of the sides of the main square and the even numbers filling in the corners as shown in Fig. 3.

Fig. 1.

Fig. 2.

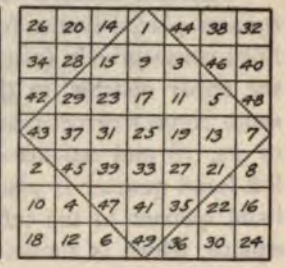

Fig. 3.

These articles merely showed the completed square and did not show or describe any method of construction.

A few simple methods of constructing these squares are described below, which may be found of some interest.

To construct such squares, n must necessarily be odd, as 3, 5, 7, 9, 11 etc.

A La Hireian method is shown in Figs. 1, 2, and 3, in which the first two figures are primary squares used to form the main square, Fig. 3. We begin by filling in the cells of Fig. 1, placing 1 in the top central cell and numbering downward 1, 2, 3 to 7 or n. We now repeat these numbers pan-diagonally down to the left, filling the square.

Fig. 2 is filled in the same manner, only that we use the series 0, 1, 2, to 6 or n—1 in our central vertical column, and repeat these pan-diagonally down to the right. The cell numbers in Fig. 2 are then multiplied by 7 or n and added to the same respective cell numbers of Fig. 1, which gives us the final square Fig. 3.

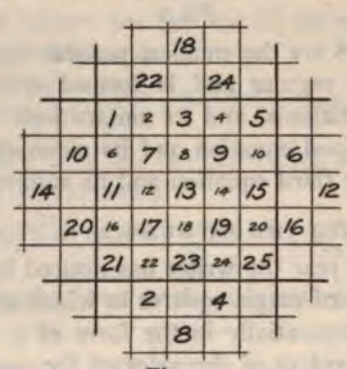

Fig. 4.

Another method is shown in Fig. 4 where we have five sub-squares placed in the form of a cross. The central one of these is filled consecutively from 1 to n^2. We then take the even numbers of the upper quarter, in this case 2, 8 and 4, and place them in the same respective cells in the lower sub-square. The lower quarter or 22, 18 and 24, are placed in the upper square. Likewise the left-hand quarter is placed in the right-hand square, and the right-hand quarter in the left-hand square. This gives us the required square, which is shown in heavy numbers.

A third method is to write the numbers consecutively, in the form of a square, over an area of adjacent squares as in Fig. 5. The mean of the series must be placed in the center cell of the central or main square and the four next nearest to the center must find their places in the corner cells of the main square, which consequently governs the spacing in writing the series. We then re-

move all these numbers to the same respective cells in the main square, and this gives us the square shown in Fig. 6.

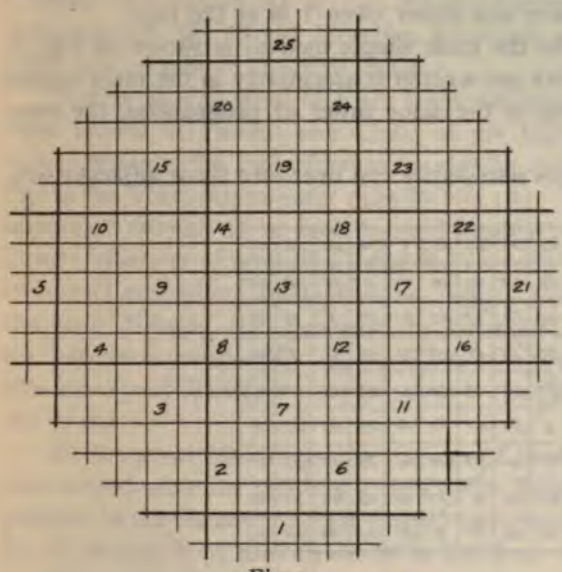

Fig. 5.

14	10	1	22	18
20	11	7	3	24
21	17	13	9	5
2	23	19	15	6
8	4	25	16	12

Fig. 6.

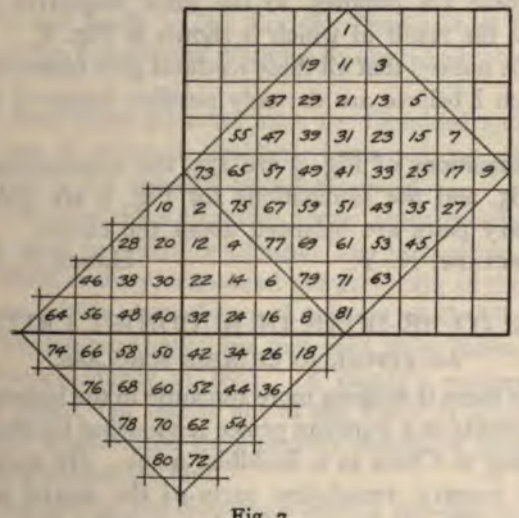

Fig. 7.

This last method is not preferable, owing to the largeness of the primary arrangement, which becomes very large in larger squares.

It might however be used in the break-move style,[1] where the steps are equal to the distance from the center cell to the corner cell, and the breakmoves are one cell down when 1 is at the top.

What seems to be the most simple method is shown in Fig. 7, where the odd numbers are written consecutively in the main square and directly following in the same order of progression, the even numbers are written.

The even numbers necessarily run over into three adjacent sub-

42	34	26	18	1	74	66	58	50
52	44	36	19	11	3	76	68	60
62	54	37	29	21	13	5	78	70
72	55	47	39	31	23	15	7	80
73	65	57	49	41	33	25	17	9
2	75	67	59	51	43	35	27	10
12	4	77	69	61	53	45	28	20
22	14	6	79	71	63	46	38	30
32	24	16	8	81	64	56	48	40

Fig. 8.

squares. These are removed to the same respective cells in the main square, the result of which is shown in Fig. 8.

It will be noticed that all these methods give identically the same results, which I believe are the only possible forms of this style of squares.

The summations of Fig. 3 are 175, the summations of Figs. 4 and 6 are 65, and the summations for Fig. 8 are 369. Also, all complementary pairs are balanced about the center.

SCHENECTADY, N. Y. HARRY A. SAYLES.

WORK TO BE DONE IN BUDDHIST CRITICISM.

AN APPEAL TO CHINESE SCHOLARS.

Perhaps there is nothing more romantic in the history of religion than the spectacle of a Parthian prince renouncing his throne in A. D. 149 and going to China as a Buddhist monk. He spent his life in his adopted country, translating parts of the sacred writings into Chinese. Acording to his own *Catalogue of the Chinese Tripitaka* (Oxford, 1883), Nanjio translated 176 original works, of which

[1] This style is thoroughly explained in *Magic Squares and Cubes* by Mr. W. S. Andrews.

55 are extant. Judging from their titles, 43 of these are Hinayana. Anesaki, in his priceless essay, "The Four Buddhist Agamas in Chinese" (*Transactions of the Asiatic Society of Japan*, Tokyo, 1908, pp. 17, 18; 28-31) identifies forty-four of these works with texts now extant in the Pali canon.

Let us look at some of thees texts, and see what kind of books were valued in Parthia and China at the time of Justin Martyr! Going through the Pali Nikayas in regular order, the first that we find is the Mahanidana-sutta (Digha No. 15). This was considered important enough to be included in Grimblot's selections from the Long Collection (Paris, 1876) and in Warren's *Buddhism in Translations* (Cambridge, Massachusetts, 1896). The text is No. 31 in the same Nikaya, also published by Grimblot. and finally there is the last sutta therein. No. 34, the *Dasuttara*, which gives a remarkable survey of Buddhist doctrine, under categories numbered from one to ten.

In the great Middling Collection (as I prefer to call it, because it is named after the medium length of its Sutras, and not after its position in the Agamas, which varied) our Parthian prince hit upon No. 6, which Rhys Davids shose in London, 1700 years later, for translation into English in *Sacred Books of the East*, Vol. XI. Next we come to No. 52, and then to No. 87, then to No. 113 (on the "True Man") and finally to No. 141, the "Analysis of Truths." In this sutta Buddha exhorts the disciples to obey Sariputto and Moggallano.

Besides these there are texts from the Classified and Numerical Collections, one of which is Buddha's First Sermon, also included by Rhys Davids in his volue of Suttas aforesaid.

Besides the illustrious Parthian, many more translators of differnt nations went to China to continue the good work, and one of these, in the third century, translated the 91st sutta of the Majjhima, the Brahmayu, which gives the vivid account of Buddha's personal appearance, his table-manners, his gait, and daily habits, first made known by Spence Hardy in 1853. In Hardy's mediæval version, Buddha says grace, but this is not in the Pali. It would be interesting to know whether the third-century translator found it in the lost Hindu original before him.

In this interesting old Sutta, we have a full-length life-picture of Gotamo of undoubted historical truth, and I often say that this discourse alone justifies the assertion that we know more about him than about Jesus.

Now, it has long been my contention that these Hinayana texts of the second and third centuries deserve special study. They are the first Buddhist Suttas of the primitive collections which we can date. The books translated into Chinese in the first three centuries were largely Mahayana and later on they were altogether so. Could not a little text-book be made of the Pali suttas translated by the Parthian, with, say, the third-century Brahmayu added? Give the original Pali, and note Chinese various readings, as Anesaki has done in my *Buddhist and Christian Gospels.*

This perhaps is the most crying need of Buddhist scholarship. Next to this, if not before it, I rank the translation of the Great Council Discipline (*Maha-Sanghika-Vinaya*). This sect was the sworn enemy of the school of the Elders who have transmitted to us the Pali. Each sect accused the other of falsifying the scriptures, *so that any agreement between them would go back to an enormous antiquity.* I do not myself believe that the final schism took place at Vesali, as the Ceylon Chronicles would have it, but at an obscure council held by Agnimitra, about the middle of the second century B. C. My reasons for this are the statements from the Great Council Discipline translated by Samuel Beal, in his learned Introduction to *S. B. E.,* Vol. XIX; and, by the way, I was very much pleased to see his pioneer work highly commended by a distinguished French sinologue.

The Great Council Discipline was brought to China by Fa-Hien in A. D. 415, and some scholar who had overlooked the translators of the earlier centuries once asserted that this Discipline was the first Buddhist book we could date!

One of the most curious things in this Discipline is its list of the sacred books, and it was translated for us by Suzuki in *The Monist* for January, 1904. The present writer has taken occasion to draw conclusions from this in previous articles. (See for example, the San Francisco *Light of Dharma,* January, 1905, and the fourth edition of *Buddhist and Christian Gospels,* Vol. I, pp. 82 and 266.)

Ther are reams upon reams of translations and critcal work to be done, but, in my opinion, these two are the most eleemntary, most necessary and most immediately pressing. I appeal to the sinologues of France, Holland and Japan to emulate each other in this important task.

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INFINITY OF THE UNIVERSE.[1]

EVER since the earliest period of Greek philosophy two distinctly different theories of the extension of the universe have been propounded. According to one of them, which no doubt originated in the naive world-conception of primitive man, the universe is finite and the earth or sometimes the sun occupies its central position. The Pythagorean school (in the sixth century B. C.) placed a hypothetical "central fire" in this point, around which the heavenly bodies were uniformly arranged in all directions, and according to this school therefore the universe was globe-shaped. Also in the Aristotelian and Ptolemaic systems the earth, supposed to be the center, was surrounded by several spheres, the outermost of which was the Firmament, the seat of the fixed stars. Aristotle's theory received the sanction of the church of the middle ages.

In modern times it is assumed by many astronomers that the universe is finite and surrounded by an infinite empty space into which the sun and the stars radiate an energy forever to remain lost. Frequently also the idea is voiced that our sun occupies a position near the center of such a finite universe. We might for instance recall the passionate discussion that for some years followed similar utterances by the renowned English biologist, Wallace. The world is then frequently identified with the galactic star-system.

[1] Translated from the German by J. E. Fries.

On deeper reflection, however, arose the by no means far-fetched idea of an infinite universe. That space is unlimited is evidently conceded by everybody. Very remote parts of the universe we cannot observe. But it is an axiom that when something is beyond the reach of our senses we must assume it qualitatively to be similar to that within our reach. Our knowledge of the outside world we have derived through our sense-perception and something qualitatively different from our experience we cannot even imagine. It was a quite natural thought, therefore, that infinite space would contain stellar bodies scattered throughout its invisible ranges in a way if not in number, like that in its visible parts.

Anaximander (611-547 B. C.) expressed the theory of an infinite number of heavenly bodies which according to him had evolved from primitive chaos. The somewhat later Demokritos, the greatest nature philosopher of antiquity, taught that the Milky Way consisted of a vast number of stars similar to our sun. The heavenly bodies were infinite in number and subject to gradual changes involving decay and rebirth.

This conception, so strikingly coinciding with our own, is not essentially different from the one later expressed by Giordano Bruno and Kant. According to Bruno, the fixed stars are suns like our own surrounded by inhabited planets. A similar view was expressed with immunity about one hundred years earlier by Cardinal Nicolaus Cusanus. The stellar bodies float in the infinite transparent ether-sea. This theory was further developed by Descartes and was accepted by educated minds up to Newton.

Kant speaks at length—at somewhat too great length—of the qualities belonging to inhabitants of other worlds. He assumed, as is well known, that the sun and likewise other stars develop from a chaos, gradually turn luminous and "burn to ashes." They will, however, awake to new

life. "When we endeavor to trace this cosmic Phenix through infinities of time and space and find it consuming itself by fire only in order to arise rejuvenated from the ashes, then the soul, contemplating all these things, is truly inspired with awe." According to this system, the parts of the universe near to us are not essentially different from other interstellar spaces.

A special development of this theory has been given by Swedenborg and Lambert. The sun with its planets and their moons form one system, the solar system. Several solar systems combine in a certain orderly way into a system of higher (second) order to which our solar system stands in a relation somewhat like that of Jupiter with its moons to our solar system. This system of second order, including our sun, forms the galaxy. Several galaxies constitute a higher system of third order. Systems of third order are units in a system of fourth order and so on. This conception has quite recently been quantitatively treated by Professor Charlier of Lund. According to him, the systems of second order—the galaxies— are within the system of third order enormously far apart, or more precisely so far that the nearest galaxy outside of our own would have an apparent diameter of less than 0.2 seconds and a maximum luminosity of a star of the 37th magnitude. It would therefore entirely escape our present power of observation. Systems of third order are millions of times still farther apart, and so on, according to Professor Charlier, and immense spaces void of stars and of exceedingly rapidly increasing extension separate systems of successive orders. This doctrine of an infinite rarity of matter in space no doubt differs radically from the original ideas of the Greek philosophers Anaximander and Demokritos who assumed the density of the stars throughout space about equal to that of our own neighborhood; i. e., of our galaxy.

This theory that our immediate surroundings should

differ to such an extraordinary extent (in reality infinitely) from the mean conditions of space, appears to me *a priori* so improbable that a closer examination of the reasons leading up to such a conception seems necessary. These reasons may be summed up in the following way.

Von Olbers pointed out in the year 1826 that if the density of the stars was equal throughout infinite space, then "the entire firmament must be as luminous as the sun." If we consider the stars in a spherical shell of thickness dr and radius r, with our sun in the center, the number of stars in this shell is proportional to its volume $4\pi r^2 dr$. As further the illumination at the center, due to these stars, is proportional directly to the mean luminosity h_r of the shell and inversely to the square of the distance from the shell, the total illumination obtained from these stars is proportional to the expression $h_r d_r$.

If we now circumscribe the sun with a series of such shells bounded by spheres of radii 0, 1, 2, 3, 4, etc., where the unit for instance is 100 light years, the total illumination L becomes: $L = h_1 + h_2 + h_3 + h_4 + \ldots\ldots$

The first terms are not exactly correct, but the later terms are more so the higher their index. This series is not convergent so that L becomes infinite unless the terms decrease more or less in a geometric progression. If we now also assume that the brightness of the stars is independent of their distance from the sun, the series cannot converge. If the mean luminosity of the stars per unit surface equals that of the sun, the whole firmament would in fact glow with the intensity of the sun. An infinite luminosity would not be reached because the more distant stars would partly be hidden by the nearer ones.

In reality experience teaches us that the luminosity h_n is constantly decreasing with growing n, which is generally expressed in the statement that the star-density decreases the farther we travel from the sun. This is par-

ticularly demonstrated through the researches of Kapsteyn. This phenomenon may either be real, as assumed by most astronomers and by Mr. Charlier among them, or the explanation may be that the light from distant stars does not travel unchecked through space.

According to the last alternative, space is not entirely transparent. For this case two hypotheses have again been offered: first, the ether itself absorbs light; second, material bodies exist in space which disturb the ether. The first hypothesis lies too far outside our experience to be considered and would in fact demand structural changes in the ether due to radiating light (similar to chemical rearrangements) and capable of absorbing unlimited quantities of energy which is entirely incomprehensible.

The second hypothesis again assuming dark bodies in interstellar spaces agrees perfectly with our experience. The dark satellites that so frequently are introduced to explain the periodic displacement of the lines in the stellar spectra; the planets and moons in our solar system; the multitude of meteorites falling into our earth and whose parabolic orbits indicate their interstellar origin; the cosmic dust incessantly driven off from the sun by the light pressure—all exemplify such dark bodies. Generally one is satisfied by pointing out the existence of such light-absorbing matter. Another question, however, arises. How can these bodies remain at their low temperature when since immeasurable time they have been exposed to the radiation from the sun, unless, as assumed by most astronomers, their heat is dissipated in infinite space, which assumption on the other hand contradicts our original thesis that the density of matter in space, although small, possesses a definite value.

It has, however, always been held that the nebulas which are widely distributed over the heavens possess an exceedingly low temperature, because if the molecules in

their outside layers were of higher temperature their thermal motion would expel them into space against the weak gravitational force of the extenuated nebula. In such gas formations small particles of cosmic dust are no doubt accumulated which absorb rays entering from outside space. The surrounding gas is thereby expanded. As Lane and Ritter have shown, this expansion is so great that a cooling is effected by such absorption of radiating light. The very probable assumption is here made that the nebulous gases, like the air of the earth, are mon- or di-atomic. The gas molecules that possess the highest velocity no doubt leave the nebula and roam about in space until attracted by denser bodies. They are then replaced by gas delivered from the interior of the nebula to the outer parts. Finally all the radiation from luminous, as well as dark, bodies is ultimately absorbed by the nebulas, which, however, are not heated thereby.

In order to fill this function the nebulas must occupy a relatively large surface in the heavens as compared with the luminous stars. According to Charlier's calculations all the visible stars taken together give a light 3000 times stronger than a star of the first magnitude. The sun on the other hand is one hundred thousand million times stronger than such a star or about 30 million times as strong as all visible stars together. Observed from earth the sun appears as a disc whose diameter occupies an arc of 1919 seconds. Consequently all the visible stars of the heavens together would form a disc of less diameter than 0.4 seconds. It is then assumed that the mean luminosity of the fixed stars per unit surface equals that of the sun. As the majority of the stars are white, while the sun is yellow, the estimate of 0.4 seconds is evidently considerably too high. Compare herewith a planetary nebula, No. 5 in Herschel's catalogue, near star B in the Great Bear, which occupies about 160 seconds and we see at once that

this nebula alone covers more than 100,000 times as large a part of the firmament as all the visible stars together. Add hereto the enormously more rarified diffused nebulas with small power of absorbtion but occupying spaces several degrees square. Undoubtedly there also exists a number of feebly luminous nebulas that escape our power of observation.

It seems perfectly reasonable then to conclude that the nebulas are able to absorb the energy radiating from the stars. The nebulas also possess the ability to check the dust particles driven away from the sun by the light-pressure, so that these cold bodies may be considered as storage houses for the quantities of matter and energy that radiate from the hot suns.

While Von Olber's proof of the hypothesis that the density of the stars decreases as we travel from the sun does not seem quite convincing, Charlier on the other hand believes that he has found a much better argument for this theory accepted by the majority of astronomers. This argument was first propounded by Professor Seeliger in Munich (*Astr. Nachrichten*, 1895) later modified by Charlier and may be formulated as follows:

Suppose distributed throughout space gravitational masses M_0, M_1, M_2, etc., where numerous bodies, if far enough removed, may be treated as rigid systems; for instance constellations or Milky Ways outside our galaxy or systems of even higher order to which our sun and Milky Way do not belong and which therefore must be exceedingly remote. For simplicity's sake we assume with Charlier that the systems are globe-shaped. The potential V per unit mass of a body in our Milky Way is then:

$$V = A + M_0/r_0 + M_1/r_1 + M_2/r_2 + \ldots\ldots$$

A is the potential with reference to the nearest bodies belonging to the Milky Way. M_0/r_0, M_1/r_1, etc., are the potentials respectively with reference to outside systems.

Charlier presupposes that V cannot be infinite. Therefore the terms in the series M_0/r_0, M_1/r_1, etc., must decrease somewhat in a geometric progression, commencing with some certain term. The significance of this formula is easily understood. If we divide space as before, by circumscribing spheres with radii 1, 2, 3, etc., around the body selected as center, then beyond a certain radius the masses enclosed between consecutive pairs of spheres must diminish at a rate somewhat less than a geometric series would indicate. The star-density again would decrease very rapidly with growing distance from the galaxy. In this way the apparent result has been reached that the mass of the universe is finite.

It is not customary, however, to draw this conclusion. If we arrange the spheres in such a fashion that between any two consecutive spheres the mass contained is constant, it suffices to make the series converge if the associated distances r_0, r_1, r_2, etc., commencing with any certain term, increase in a geometric progression. As r_n becomes infinite only when n is infinite, it is possible to select any arbitrarily high value of n and nM; i. e., the quantity of matter in the universe exceeds any arbitrary great value. But in any case the mean density of stars in the universe equals zero (infinitely small).

This theory has been elaborated by Charlier to establish the possibility of an infinite universe. In spite hereof the solution is not satisfactory. Infinity of matter should then be of a lower order, so to speak, than infinity of space, so that the mean density of matter would be infinitely small (zero). Professor Seeliger correctly objects that a "space filled with infinitely rare matter can after all not be imagined."

One may now ask: why might not the potential V be infinite? The answer is, because then the velocity of a star arriving "from outside" would become infinite with

reference to our point of observation, and we never observe any immeasurable velocities of the stars. Only in rare cases do these velocities exceed 100 kilometers per second. This would agree with the Charlier system if the traveling time of the stars could also be infinite. This, however, as we will see later, is impossible because such a system can only last for a finite period. But if we assume with the old philosophers an approximately uniform distribution of the stars throughout infinite space, no "outside," and consequently no danger of infinite, velocities exist.

In order to understand the peculiar development of this question so that the false conclusion drawn will become apparent, let us return to a simplification of Seeliger's reasoning already familiar to us. Imagine a globe-shaped conglomeration of stars of constant density throughout. A star at a certain distance from the center is attracted to it by a force proportional to the product of the density and the distance.

Although our Milky Way does not form such a globe, we must admit that somewhat similar conditions obtain if we assume its form to be that of a considerable oblate spheroid. If we now let the radius of our star-globe grow, the density remaining unaltered, the attraction on a star located on, say, half the radius increases in proportion to the radius. When the star-conglomeration grows beyond any limit chosen, the attraction on the star considered towards the center also grows beyond any limit mentioned. In addition the position of the center becomes undetermined, and so consequently does the attraction, which is unthinkable. Professor Seeliger also considers the case of the stars arranged inside an infinite cone of revolution and meets again with great difficulties.

In this connection Seeliger expresses himself as follows: "Entirely possible and reasonable assumptions lead to impossible and unreasonable consequences. Such re-

sults from an entirely general law seem hardly permissible and we are forced to admit that Newton's law applied to an infinitely extended universe leads to insurmountable difficulties and insolvable contradictions if the quantity of matter dispersed in the universe is considered unlimited."

Seeliger very consistently comes to the conclusion that Newton's law does not always hold as is evidenced by the following statement: "Newton's law is a purely empirical formula, the absolute exactness of which cannot be admitted without introducing a new hypothesis for which we have no foundation." But if we endeavor to formulate another law to substitute for Newton's when dealing with enormous distances, such a one can hardly be found which contains Newton's law for smaller distances and at the same time does not lead to the difficulties met with in the deductions of Seeliger. True, he offers a kind of absorption of gravity similar to that of light as a possible solution. But as we know of no matter with such powers the analogy is fictitious. We lose also by such considerations all firm ground for further discussion.

It is then easily understood why Seeliger's argument is often cited as disproving the infinity of the universe. But his reasoning is not conclusive. The supposed difficulty is that the attraction on a body surrounded by an infinite number of other bodies becomes indetermined according to Seeliger's method of calculation and consequently may assume any arbitrary value. But this only proves that such a method cannot be used, and how can we after all imagine an infinite globe containing stars surrounded by an infinite empty space? If a body is located in an infinite space where matter is approximately evenly distributed, the attraction due to this matter, apart from that due to the bodies in its vicinity, is equal in all directions as evidenced already by considerations of symmetry. These attractions consequently cancel and the body in question behaves ex-

actly as under the influence of the nearest bodies or groups of bodies alone, with the more distant ones entirely removed or their attraction in some way absorbed.

No conclusive reason exists therefore why the universe should not be approximately uniformly interspersed with stars. On the contrary a system where the star-density rapidly decreases outwardly, like the system conceived by Charlier, or still more a finite system of celestial bodies, does not harmonize with our conceptions as soon as we take the second side of infinity, relating to time, into consideration.

If we legitimately discuss the conditions for an infinite quantity of matter in space we are also justified in considering the relation of matter to the endlessness of time. Peculiarly enough this problem given by Demokritos and Kant has aroused small interest on the part of astronomers, and yet we call the indestructibility of matter and energy our two fundamental laws of physics.

When we, with most astronomers, imagine large gaps in the firmament through which a ray of light may escape without encountering any material obstacle, however far it travels, so must matter driven away by the light-pressure as well as radiating energy disappear through these gaps forever to remain lost. The same fate is in store for those wandering stars, which like 1830 Groombridge and Arcturus, possess a velocity too high to be bound to our Milky Way. In the course of endless time such a system must lose not only its energy but also its matter. Neither can it have existed since immeasurable time.

Lord Kelvin says with reference to our Milky Way that if its mass is 10^9 times greater than that of the sun and its radius 3.09×10^{16} kilometers, so would its stars from original rest collapse in the course of about 17 million years into one lump. He also holds that the stars cannot have been luminous for more than 25 to 100 million years. Here-

with should be compared the different estimates that allow life on earth an existence during about 1000 million years. The last estimate by Kelvin must in fact be considerably too low.

In any case the propounders of a finite universe or of the Charlier conception admit that the Milky Way must once have come into existence. We cannot assume that matter suddenly (or gradually) was born out of nothing, and the same is true about energy. Consequently the Milky Way must have originated from bodies that in some way, presumably through a catastrophe, were dispersed into a disc-shaped formation of splinters. We can hardly conceive of any mode of creation different from that in which the spiral nebulas are formed, that is, by the collision of two colossal stars that meet with enormous velocities and burst asunder. In fact Easton is of the opinion that our Milky Way possesses a spiral structure. The question is now whether or not such enormous stars exist. The mass of Arcturus has been calculated to be more than 50,000 times that of the sun. This is more than sufficient to give rise to the 6000 stars of the sixth magnitude that Seeliger takes into account. But it does not suffice for the 10^9 stars included in our galaxy by Kelvin and Charlier. It may reasonably be questioned whether the mean size of these stars equals that of the sun, and further the estimate of the mass of Arcturus is obviously only a lower limit. In any case such an explanation is not absolutely inconceivable.

Under any circumstances we must admit that the Milky Way is not a formation that has existed since eternity and that it owes its origin to the collision of stellar bodies journeying from other parts of the heavens. But if we assume the density of matter in space equal to zero, the probability for such an encounter becomes zero too; i. e., we cannot conceive of such a distribution of matter.

The most obvious argument, however, against a finite quantity of matter in space is the fact that the energy of the stellar bodies in the course of infinite time would long ago have been dissipated in empty space so that no luminous stars could further exist.

From the previous discussion I believe the conclusion may be drawn that no other world-conception is possible than the one already presented by the Greek nature philosophers Anaximander and Demokritos, who assumed matter to be distributed throughout the universe in a fashion approximately like that in our neighborhood.

Concerning the solution offered by Charlier in particular, according to which the Milky Ways combine into higher systems and these again into systems of still higher order, and so on, an enormous difficulty presents itself in explaining the origin of such systems. The same objection naturally holds in regard to the older theories of Swedenborg and Lambert. It is already very difficult to understand the formation of a system as large as the Milky Way. Incomparably more so becomes the explanation of systems greater beyond comparison.

With reference to the dissipation of energy through radiation and of matter through light-pressure from luminous stars, the Charlier world-conception meets with exactly the same difficulties as the assumption of a limited world in an unlimited space.

A finite world or a world where matter is infinitely rarefied cannot have existed in endless time and therefore does not harmonize with our knowledge of the qualities of energy and matter.

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THE GREEK INFLUENCE IN ECCLESIASTES.

THE average intelligent reader of the Old Testament knows something of the long discussion provoked by the above named book, and the early hesitancy about placing it in the canon. He knows also that some modern scholars would question the authenticity of some portions as inconsistent; other critics would rearrange the material to secure logical order and consecutiveness of thought. But if the reader side with those who view the book as a diary of "confessions," like those of Rousseau or Marie Bashkirtseff, he will repeat that "to him who only thinks, life is a comedy, while to him who feels, life is a tragedy," and feeling is not logical nor consistent nor logically consecutive in its self-expression. The critical proposals mentioned need balancing with psychological insight.

Tyler and Plumptre have made the scholarly world familiar with a Greek element in the book, though a slight modification may be necessary. A chief interest has latterly centered around the question of date,—one group making the work belong to the late Persian period and a stronger group contending for the Greek period, about 200 B. C. Renan would date it as late as 125 B. C.—which would give a chance to E. J. Dillon, to find Buddhist influence in the book. But the historic evidence of intercommunication between Greece and Palestine is sufficient to account for the elements in question at a date before the rise of Buddhism. We may question if the psychological

unity of humanity does not account for all that impresses Mr. Dillon. The parallels are not sufficiently close and numerous.

Some familiar data upon the intercommunication of Greece with the Orient may here be grouped. Were Ecclesiastes the work of a traveled Hebrew, his contact with Greek thought might be put at a very early date, if the linguistic phenomena of his book did not forbid it.

1. Magnesite from Eubœa and teak wood from India are found in the lower levels at Nippur—approximately 4000 B. C.; a date pre-Hellenic and pre-Buddhist.

2. Sargon of Accad and his son Naram-Sin have left in Cyprus memorials of their rule—about 2800 B. C.

3. Assyrian conquest reached Cyprus as early as 1150 B. C.

4. Early Greek art copies Assyrian and Egyptian models, as shown by various recovered specimens.

5. Its mythology is similarly influenced: Griffins and harpies are Oriental cherubs and eagle-headed divinities.

6. The Greek alphabet, introduced from Palestine, and written from right to left, antedates 700 B. C., probably should be dated 1100 B. C. Ionic Greeks may have adopted it a little earlier: an ancient Asianic syllabary of the Troad being displaced, but lingering a while longer in Cyprus.

7. The Greek is very prominent in the East immediately afterward. Greek mercenaries filled the armies of Psamtik I of Egypt, of the 26th dynasty. Their inscriptions at Abu Simbel, nearly contemporary with Josiah, antedate Solon and the seven wise men of Greece. Hebrew refugees, despite Jeremiah's warning, sought shelter under the protection of their fortress at Daphne, a generation later.

8. Archilochus, the Greek poet, tells us that his brother served in the army of Nebuchadnezzar against Jerusalem,

B. C. 586. Nebuchadnezzar's attack upon Egypt about 570 B. C. was checked by the Greek garrisons of the Delta.

9. The close connection between Greek and Persian, and the Hellenizing of many enterprising Persians thereafter is a familiar story. Xenophon's 10,000 Greeks marched northward through Babylonia four years before Ezra set out thence to reform worship at Jerusalem.

For the intellectual life that might flow through these channels of intercommunication, we have the following synchronisms:

1. When Nebuchadnezzar was casting up his embankments at Jerusalem, the Orphic religious revival was shaking Greece and its colonies, and Thales at Miletus was making his systematic attack upon the mythical origin of things, and undertaking physical explanations. About this time Siddartha is believed to have taught in India.

2. When Haggai and Zachariah were striving to rebuild the Temple, Pythagoras was teaching in Italy, Herakleitos in Ephesus just afterward; Xenophanes had begun his systematic attack upon the anthropomorphic gods of Greece. Zeno, Parmenides and Empedocles had won their fame ere Nehemiah began rebuilding the walls of Jerusalem; and Socrates perished in 399 B. C., two years before Ezra began his reforms (Kosters).

3. Of the great humanistic religious reconstructionists, Æschylus was born near the time of Cyrus's death, Sophocles was a contemporary of Nehemiah, Euripides died soon after Ezra's reforms.

As Koheleth hardly shows systematic philosophy, but rather the gnomic reflections of one probably mystical and poetical in temperament, we need hardly give much attention, as Tyler does, to the later Greek systematic philosophers. But the earlier Greek philosophers were unable to shake off the fetters of centuries of oral expression and wrote in gnomic hexameters for popular circulation. These

are nearer the Hebrew "Wisdom," the Semitic proverbs, in method. The poet, rather than the metaphysician, expresses the heart of his people, and the Greek populace were familiar with many passages from their poets and gnomic philosophers. This type of teaching would be peculiarly adapted to the Hebrew mind. Koheleth shows us heart struggles rather than metaphysics.

Passing the first philosophical speculations of the Milesian school we find the Ephesian Herakleitos protesting against polytheism, declaring that the present order of things has existed forever, and will forever exist; change is unceasing, yet is by fixed measures and laws; the gods may not alter them. The eternal order was not made by any (popular) god or man. The Sun cannot overstep his bounds; if he did the Erinnyes would find him out. God is all things and in all things; he is day and night, winter and summer, war and peace, satiety and hunger. He assumes different forms, as when incense mingles with incense, vapor with vapor; and each man gives him the name he pleases. All things flow; we cannot bathe twice in the same river. Struggle and change must be forever; if they should cease, all things would pass away. For all things come by strife; war is the father of all things, and hidden harmony is better than manifest (i. e., is an incentive to action, stimulates men to search for it). For God, all things are fair and good and just, but men deem some things just and others unjust, and all things are absolutely destined. The gods are the mortals; men are the immortals, each living in the other's death, and dying in the other's life. Fire is the primal element; of it are all things made, into it will all things be dissolved. The senses are not always reliable; there are many illusions, wherefore it is better to follow reason than sense.

Xenophanes, the Eleatic (B. C. 580-500?) taught that God is one, supreme, all-perceiving, all-hearing, without

such body or organs as men ascribe to him ("If the cows had a god they would paint him as a cow," he said, ridiculing anthropomorphism). As for the visible universe, all things begin in earth and end in earth. Transmigration he ridiculed with the story of a man who told another to stop beating a hound, "it is the soul of a dear friend—I recognize his voice." Those who preferred strength to wisdom he ridiculed. An acute observer of nature, he added notes of fossils in the rocks as showing that the land rose out of the water. He gained as a pupil Parmenides, who managed to reduce the world to thought, since Thought and Being were the same. Righteousness for him, as for Eastern Ionians, is the world-ruling power and shall triumph over all. Being is one, homogeneous and unchangeable.

Empedocles asserted that man has little opportunity to acquire knowledge but rises and is borne away like smoke, thinking he has learned much and vainly boasting of the little he has found; nevertheless wisdom is to be pursued, though the secrets of the universe are far off and exceeding deep—not to be found out. As for the world, there is no *beginning to be* nor *end,* but only mixture and separation. Nothing is added to them and nothing is taken away. But all things come from *Love* and *Strife,* and *these* shall be forever, though *men* appear but a little time and then vanish like smoke. And when the limbs of man are united vigorously by love, then is the frame strong; but when strife prevails, then the limbs fail and fall apart and are scattered on the sea of life. The world itself is now in its period of strife. As to God, Empedocles held with Xenophanes that he is all-pervasive pure mind, without such parts as men attribute to him. Perhaps all things came from mind. Matter could not grow old or perish, but the *mind* became *weary*. As to the soul, he was rather Pythagorean, counting himself a present fugitive from the gods, and

a wanderer on the raging sea of strife, for 30,000 seasons apart from the blessed, having formerly been a maiden, a boy, a fish, and a plant; doomed to wander in this stage where are murder, wrath, diseases, contention and harmony, folly, truth, obscurity, birth and death, sleep and waking, motion and stability, many-crowned greatness and lowness, silence and voice. All these are only forms of change, yet there is no real change; these are only illusions to which our senses are liable. His problem then was to escape the domination of sense.

These brief summaries are for a purpose. They are the sources to a large extent of the philosophy of the Greco-Phœnician Zeno, 150-200 years later. It will be seen that they deal mainly with physical speculation; are alike in discarding the old Greek gods. Parmenides must be grouped with them. He denied the change of the Ever-One—this was only an illusion of our senses. None of these philosophers distinguished between the physical and spiritual, as we do; spirit and matter seem really one for them. But they were neither materialists nor pantheists, as we use the terms. Merely asserting the unity of God and nature, it is man's place to cast aside his illusions and to be at one with it and its purposes.

Again, it is seen that Empedocles possesses for us the livelier human interest, being distressed to know his own place in the cosmos rather than to give us a mere cosmology (compare Matthew Arnold's "Empedocles on Ætna"); and this, with the world-weariness of the quest, is the theme of Koheleth. The utter unlikeness of the latter to all other old Hebrew literature must emphasize the possibility of connection.

Looking now at the great tragedians, the other religious reconstructionists of the epoch, we find the attack upon the old popular gods more direct; or, let us say, more fervid, emotional. Since the Greek stage was the Greek

pulpit, and the drama developed out of religious liturgies and festival choruses that dealt with the legends and religion of the Greeks, as the Hebrew prophet drew upon the past of his people, these Greek humanists are of first importance for us. We shall find that God is more vividly personal for them, as he always is for the emotional or "lyrical" temperament; while the philosophic views just mentioned fail to emphasize his personality as distinguished from nature. The conception of the latter is closely akin to our stock phrase of "natural law." With the whole early Ionian school, from which stoicism was to come, natural and moral law were ultimately identical. They did not weigh the relations of each individual human personality to the divine, nor consider profoundly the latter's relation to the social order. Here we find the field of the tragedian and Orphic mystic.

The most volcanic attack upon the old popular gods is that of Æschylus. Writing nearly a century after the systematic philosophical attack of Xenophanes, in the throes of the Greco-Persian struggle, the titanic power with which he speaks is due in some measure to the fervid emotions of the time. Choosing the myth of Prometheus bringing fire from heaven to man, and giving a Greek etymology to the old Sanskrit title, he makes the Titan personify forethought, providence, intelligence, hope. For the crime of seeing that light is good and makes men wise, and for putting them in possession of the sources of knowledge, he is sentenced by Zeus to be chained to a rock on Mount Caucasus, and a vulture is stationed to devour his liver by day while it renewed itself by growth during the night.

Æschylus makes Kratos and Bia, power or strength, and compulsion, the personified agents of Zeus in this war of the cosmos with the soul. These agents speak their character. Sheer, unfeeling brutality characterizes their

every taunt of the Titan representative of the struggling mind. Dignified silence is the part of Prometheus. We are repeatedly informed that he is the child of Themis (Justice, Natural Law, or Eternal Order) and Zeus is a tyrannical usurper of the throne of heaven. Even Hephaestos who dares not disobey Zeus is in full sympathy with the sufferer he must punish, and thus addresses him while fettering him:[1]

"High scheming son of right,
The woe of present evil shall oppress thee,
For he's unborn who shall deliver thee,
Such being the gain of thy philanthropy.
For thou, a god, not crouching 'neath the wrath
Of gods, on mortals hast conferred high honors,
More than just. For which offense thou must stand guard
Upon this dreary crag, in upright posture,
Sleepless, never bending knee, while manifold
Laments and bootless groanings shalt thou vent,
For Zeus's wrath is hard to be assuaged,
And every one is harsh whose rule is new."

Prometheus, replying, asserts himself divine; and further, he foresaw too all this woe, yet dared it none the less. Kratos and Bia sneer at his philanthropy and wisdom that have but separated him from mankind—placed him apart from comprehension and sympathy. Prometheus keenly feels the fact and exclaims:

"Compassionating mortals, I was deemed
Of pity's meed unworthy; ruthlessly
Am I thus crushed;
To Zeus, ignoble sight!
Men's doom from mortal foresight I kept hid;
I caused to dwell within them sightless hopes."

To Kratos and Bia this is incomprehensible. He surely had no foresight, or he would never have gotten into this

[1] Quotations from Owen, *Five Great Skeptical Dramas.*

plight. He disdains reply, but again assures others that he knowingly incurred this pain. Compare Ecclesiastes, "He that increaseth knowledge increaseth sorrow."

Yet are there soothing influences in the visible order of nature. The daughters of Okeanos, the fragrant spirits of air and sea, come to comfort him. At the touch of sympathy, his stoicism gives way:

"Would that in Hades, 'neath the earth,
Or Tartaros of unbounded girth,
Home of the dead, where darkness reigns
He'd placed me when in cruel chains
Impregnable he'd bound me;
That neither god nor mortal being
Should laugh when these my sorrows seeing
But now the plaything of the wind,
'Neath open sky am I confined
While foes may joy around me."

He says of Zeus, "Justice he keeps for himself alone" (i. e., he has naught but injustice for all others),

"Yet shall he need me; I, not he, shall triumph."

Not his strength, his brute force, but his injustice and craft is his power;

"But mother Themis, Justice, Earth,
Of many names one form, hath disclosed
To me the future, how it shall befall!"

* * *

"For somehow to each tyranny pertains,
This malady—suspicion of its friends."

Again the sympathy of the powers of nature is felt, but they seductively urge him to yield, though they cry out against the injustice of Zeus (compare Lowell's "Sirens," Tennyson's "Lotus-Eaters"). Life is so short—wisdom so little—pain so much; and Okeanos interposes, "Thou art

better fitted to advise thy neighbors than thyself, if one may judge by thy fate." But Prometheus responds,

> "I will bear out my present destiny,
> Till Zeus's mind shall cease to rage."

> "Without me, men seeing saw to no purpose,
> And hearing did not understand."

He has made civilization and social order out of ignorant brutish cave-dwellers, teaching them all things,—but "curing others cannot cure myself." The chorus (popular thought) interposes,

> "Be not regardless of thy luckless self.
> I have good hopes that from these chains set free
> Thou yet shalt be not less in power than Zeus."

To this Prometheus answers:

> "Not so are those things ordered by Fate,
> Who all things consummates. But bowed down
> By countless grievous woes, I thus escape
> My chains and art is weaker far than fate!"

That is, his doom is that he must suffer still; his relief that he must still struggle for knowledge and truth; he escapes by bearing and daring; convinced that evil shall yet fall, he is stronger though bound, than the tyrant. This is the inspiration of Lessing's choice of search for truth, rather than truth itself; of Sophocles's "Toil conquers toil by toiling"; of Goethe's "Who comforts himself by ceaseless struggle, we can at last set free." Compare Koheleth's "This sore travail hath God given to the sons of men to be exercised therewith." Shelley and Byron have taken fervid inspiration from the same passage.

Prometheus declares the curse of Time is upon Zeus, who lacks Prometheus (foresight)—"I never will be his!" All his enginery will recoil upon himself. The chorus warns him of Zeus's preparations—"So let him do—all is

foreseen by me!" Hermes enters with supercilious demands. Prometheus retorts to this "errand-boy of Zeus":

"For thy base thralldom,—know thou this full well—
I would not barter my unhappy lot;
Since I deem better, slavery to this rock,
Than to be trusted messenger of Zeus!"

And this final defiance of the roused and rallied cosmic forces:

"Let fiery wrath
Of lightning double-edged be hurled on me
And vexed be ether by the thunder claps,
And paroxysms of fierce winds!
Earth from her basements let the storm winds rock;
Aye, from her very roots!
Let ocean waves and paths of heavenly stars
In violent surge commingle mutually,
Let Zeus my body cast with whirling fling
By Fate's stern eddies into murky Tartaros,
At least he cannot visit me with death!

* * *

O Majesty revered of Mother Earth;
O Ether that the common light of all
Revolv'st around—
Ye see what wrongs I suffer!"

We can hardly imagine the effect upon a Greek audience when their chief god is thus arraigned through the medium of one of their popular legends as a monster of wrong. Though accustomed to offer him sacrifice and vows daily, their greatest tragedian has assailed him as cruel, arbitrary, conscienceless, wronging innocence, striving to crush him who would help mankind. He openly attacks the idea that because Zeus is God he can do what he pleases and asserts the real divinity and immortality of man's ethical consciousness. Only Kratos and Bia maintain, before the liberty-loving Greek audience, that "none

but Zeus is free." Unselfish sympathy and service of man is superior to every despot, human and divine, and must ever suffer, but never die—like Isaiah's "suffering servant." The hero foresees that he shall live, and be vindicated, though he does not yet know how. One may compare Job and Habakkuk.

Prometheus maintains, in effect, that justice, humanity and sympathy are of mightier authority than the inexorable fate of the Greek tragedies. To the taunt that the light he has given men has not freed them from sorrow, he replies that wisdom and knowledge increase sorrow, yet nevertheless are the best gifts for men. So Koheleth concludes.

In the cool and silent contempt for Kratos and Bia, brute strength and compulsion, Prometheus expresses the Greek sentiment that "wisdom excelleth strength as far as light excelleth darkness." In saying that "sorrow but makes the learner to be lord," he again anticipates Koheleth. In concluding that strife and struggle are not merely inevitable, but the true, needful portion of man, he thinks like Koheleth. Freedom lies in the acceptance of one's fate, and conformity to righteousness, as Koheleth concludes. Men's conscious innocence and "blind hopes" (faith?) sustain them against wrong, as in Job's case. In his expression of ceaseless change that cannot die, with ceaseless pain for the wise, which the brutish cannot feel, we have the world-weariness of Empedocles and Koheleth —"Weariness of weariness, all is weariness." Asserting that there should be one system of ethics for God and man, he voices the favorite theme of the Hebrew prophet, though approaching the problem from the other side, asserting that man has some rights that even a god is bound to respect — a fruitful viewpoint for theological construction. More sharply than the Hebrew he asserts the authority of reason and conscience and ethical ideals. In this sense of individual power, Job and Koheleth do not attain to Æschy-

lus. Replying to the taunt of Folly for conferring wisdom and knowledge upon feeble creatures of an hour, who spend their wisdom in madness and foolishness, his assertion of "sightless hopes" conferred upon mankind means that true wisdom transcends the finite and visible, and includes anticipation as well as realization. He has a doctrine of social evolution—that he has made men out of cavern-brutes —which calls to mind Koheleth's "Say not thou, What is the reason that the former days are better than these; for thou dost not inquire wisely concerning this."

We cannot speak at length of the loftiness and moral sublimity of this drama of Æschylus, nor of its immeasurable influence upon the history of human thought. We may ask why, with an outburst so impassioned, with loftiness unsurpassed even in Hebrew literature, with disinterested philanthropy and intense unmerited suffering—did the Greek utterly fail—go morally and spiritually bankrupt in the degenerate days of the Seleucidae?

You cannot rehabilitate a dethroned divinity. Fallen Dagons must be set up every morning—and a sorry figure they cut. The higher Greek ethical ideals were left related "to an unknown God." For the masses of mankind, the character of their gods is inseparably linked with the idea or name of god; you cannot assail the old character and keep the god name. There was an advantage then with the Hebrew in starting with a divine name not known to the patriarchs, nor burdened with ancient traditions. Their first knowledge of Yahveh, that he sent some messengers and rescued them from a region not under his jurisdiction gave them an ineffaceable impression of his power, sympathy and unselfish kindness. Beyond that, they knew nought, and had to learn his ways. There was then less danger that advances in ideals of morality and humanity would have to battle with the supposed character of Yahveh. What this meant from the standpoint of possible religious

evolution is almost incalculable. The prophet could attack abuses with the claim that Yahveh was misunderstood. He did not by such attacks subvert all worship. The very fact that Yahveh for some centuries was deemed to dwell in Teman, only issuing forth to battle in hours of desperate need, lent itself to the end in view, and prevented early days of superstition from completely fusing Yahveh with local legend, to the utter ruin of the hopes of religion. Thus the Hebrew god could be kept in advance of the popular ideal. The reverse became true of the nobler of the Greeks. These last must borrow the Hebrew personality as a satisfactory radial point for their intellectual systems and a proper support for their strong individual, self-asserting sense of righteousness. For the final query of humanity is not merely "What is said?" but "Who says so?"

Shall we say that the corruptness of the Greek Pantheon was the blessing destined to correct the deficiencies of Hebrew prophetism? This is not said to be sensational. We know the turmoil and trouble in Israel, knowing of their national god only what was told by conflicting schools of prophets and priests, and with a sense of utter dependence upon special messengers, and ceaselessly looking for an objective god, and complaining that "He hideth himself that I cannot find him." But the restless Greek intellect, destined to teach the world to think, grapples with the problem of evil; and concluding it to be one with the character of the national gods, voices the volcanic explosion of Æschylus. The Greek seeks truth subjectively, appeals to his own conscience, his own sense of justice, his own humane instincts, his own hatred of ignorance, his passionate longing for perfect self-expression, his belief in the eternity of right, his own blind but deathless hopes. He arraigns the gods at the bar of humanity, and predicts his own victory in the strife, suffer as he may in the mean-

time. They may torture, but cannot destroy him. As Socrates said of his soul "You may bury me—if you can catch me!" And he will teach the later Jew, burdened with doubt, slave of the scribes, wearied with the yoke of ordinances and traditions of the elders, something of his own method of inquiring after God. Ask yourself, inquire of the light within. Return and commune with thine own heart. As Kingsley's Aben-Ezra says to Miriam, "Men have lied to you about Him, mother, but has He ever lied to you about Himself?" So Koheleth has learned this non-Semitic method, and returning and communing with his own heart sees some things clearly that the world-order seems to refute, or fails to explain. The Greek helps save the Jew in his hour of intellectual need. The individualism of Ezekiel had not reached to individual intellectual independence. The final priestly domination, akin to that of Babylonia, produced the tyranny of the New Testament times: accept the dictum of the elders or be cast out of the synagogue—"Learning to the bastile, and courage to the block; when there are none left but sheep and donkeys, the state will have been saved." Here again we may note the utter absence of the priestly element in Koheleth, and the great difficulty it had in getting past the arbiters of orthodoxy of a later time.

We may not follow in detail subsequent developments of Æschylus's attack upon the national faith. Sophocles, with unconcealed contempt for the gods in one sense, asserts a supreme righteousness as the final force in nature. He treats with mild irony men's pretensions to knowledge, the boasted strength that is only weakness, the self-congratulation upon good fortune when ruin is at the door. Though one live many years and beget many children, the days of darkness shall be many. The central agents in some scene of wrong at last confess "I am nothing—nothing!" With Æschylus, he holds to the right leading of certain inner

impulses as opposed to the laws and conventions of men or the oracles of the gods; and opposes Antigone, a poor and wise child, to Kreon, an old and foolish king. Outbursts of anger characterize fools; evil will achieve its own ruin, though often not till after many days. Heaven hates much speaking, vociferous worship, and hypocritical service; but the humbled penitent, though outcast from men, is "ushered forth from life, not with groans or sickness or pain, but beyond all mortals, wondrously." Sophocles adopts a vicarious doctrine; is sure of a future life, though he knows not what it is like. Present suffering is not proportioned to visible demerit, nor is the sufferer always guilty. The misdeeds of ancestors and the oppression, treachery and ambition of evil men occasion much suffering of the innocent. Yet the latter are sometimes overwise, and find their wisdom is a vanity and grasping of wind. Men conquer by enduring, and sorrow is a spiritual discipline. His conception of the power that is to be revered is more personal than that of the philosophers we have noticed. His theology seems that of his contemporary, Socrates—his inner divine light is the *daimonion* of the latter. He differs from Koheleth in being devoid of pessimism—he "sees life steadily and sees it whole," though the chorus of the people sings that it is best never to be born, or being so, to return whence we come as speedily as possible. His own faith in an ultimate overruling power is never shaken. In his idea of God is no anthropomorphism.

The figures of Euripides are more human, if possible; more pathetic. The feeling of pain is greater, the quest for knowledge more fruitless, temptation to evil more overpowering, and he is tormented by a sense of the pettiness of human woes. Hence arose Aristophanes's jest about "the rags in which Euripides dressed his heroes." One feels that the Greek nerve is failing, the Unknown God must soon appear. "Scarce one happy scene canst thou

find in all the life of man." His diatribes against the national gods are alternately furious or cynical. "Wert thou, Apollo, Poseidon, or Zeus, the Lord of Heaven, to make atonement to mankind for every act of lawless love, ye would empty your temples in paying fines for your misdeeds!"—a shot perhaps at contemporary priests as well as ancient myths. To a victim, "Avenge thee on the god who injures thee, and fire the sanctuary!" To an oppressor, "Oh, thy hard heart! Oh, the gods'—more hard than thine!" The altars of the gods protect alike the just and unjust; religion often cloaks an evil man.

Contrasting, the sorely beset Hippolytus (in Joseph's situation) declares, "To reverence God, I count the highest knowledge," a sentiment also found in Sophocles. The heroes of Euripides all cling to moral convictions, but he portrays the difficulties in the way of right living more seriously than his predecessors. One may perish in devotion to truth, nevertheless "it is better to slay thyself than yield to unholy appetite." There should be no yielding of the spirit to external compulsion. The righteous perish because of their righteousness. The virgin-goddess Artemis addresses the dying Hippolytus:

> "No sin of thine hath thus destroyed thee!
> Thy noble soul hath been thy ruin!"

Hippolytus: "Ah, fragrance from my goddess wafted!
Even in my agony, I *feel thee near and find relief!*
She is here in this very place, my goddess Artemis!

Artemis: "I have none now to tend my fane; *but e'en in death, I love thee still.*"

That is the climax of the Greek subjective search for God in a world objectively confusing. The Hebrew's objective method could never say this. See Job's recurrent complaint, that he cannot find Him (e. g., chapter xxiii); his voice is rather that of Ps. xxii, "My God, my God, why

hast Thou forsaken me?" We may see the inestimable value of the Greek truth; the dying Hippolytus prepares us for the dying testimony of the Greek martyr Stephen, or the Carpenter's calm in His hour of trial—"Nevertheless, I am not alone, for My Father is with Me."

This material is sufficient. Zeno and Epicurus contribute nothing, both really going back to the conceptions of Herakleitos of Ephesus, borrowing some things from other sources.

What is the central feature of this 200 years of speculation and skepticism with regard to old Greek theology? A protest against anthropomorphic and unmoral conceptions of God, and mythical cosmogonies. The animism that gave each feature in a Grecian landscape its animating nymph, dryad or oread, results in the philosopher substituting one spirit as resident in and animating all nature; our modern doctrine is that of the Divine Immanence.

What philosophical difficulty is met here? As the popular dryad could not be separated from the tree in thought, nor the tree from the dryad, each existing or perishing with the other, so the larger world spirit of Herakleitos, Xenophanes and Empedocles was not at first differentiated from the physical universe. Their emphasis upon the unity of physical and moral law anticipates the method of Henry Drummond, 2500 years. For them, *Themis,* "What is established" stands in the place of the Hebrew's "It is written."

Having the doctrine of supreme, inexorable law "without variableness or shadow of turning" as the key to the world order, the humanists consider man's place in this iron scheme. The cry of the human for a personality differentiates God and the individual soul from the things that are seen, gives the high faith of Sophocles, Socrates and Euripides, and opens the way for Plato's "music of the stars" that but ends in his longing for a Divine Man

who shall make plain what is still dark to him. Progress in a definite direction—evolution?—is substituted for the ceaseless round of meaningless change first glimpsed by the philosophers. Ceaseless pain is recognized therein, but its necessity as discipline affirmed.

We have seen the place asserted for the human intellect or soul; the asserted divinity of inner convictions. Socrates dies for them, like the heroes of Æschylus, and finds these subjective manifestations of divinity a sure sustaining power. Their authority is absolute and a basis of responsibility. All the humanists emphasize subjective evidence of immortality; none essay to paint the future life.

Thus in the "Old Testament according to the Greeks," some ideas are wrought out that were not evolved upon Semitic soil. Add to the overthrow of anthropomorphism, to an immanent as contrasted with a purely external God, to the value of subjective phenomena and data, and to the certainty that suffering is disciplinary not merely punitive, the primitive difference between Aryan and Semitic gods, viz., world or universal powers as contrasted with local or national gods. There was never a god of the Greeks, as there was a god of the Hebrews. But there was a quick identification of various local divinities with Zeus, Artemis, Apollo, etc., that showed the Greek power of generalization, and a fundamental notion of the unity of the Universal Object of man's spiritual quest—a notion involving comparative religion striving to free itself from the confusing aliases of the Divine, and a notion which we may question the unaided Hebrews' ability to attain.

Consider now Koheleth: It is devoid of the dominant Hebrew traits. It is without anthropomorphism, as even its later imitators Ecclesiasticus and Wisdom of Solomon are not. What other O. T. writing thus speaks of God? There is an absence of racial or local reference in connection with God. There are no historical references, no inter-

est in "the chosen people" nor in "the god of the Hebrews," no god of battles, Lord of Hosts, or God of Abraham, Isaac and Jacob. There are no marvels, signs and wonders, on the contrary, an unceasing steadfastness even in the wearying changes of the world order. The cosmological order, not the local, social order of the Hebrew prophet, is the subject of complaint. There is no interest in forms of worship, no question of orthodox portrayal of the Lord; no reference to "the law of the Lord," or "the instruction of the Lord"—"the way of the Lord"—in any Hebrew prophetic, priestly or wisdom sense. Let us emphasize the fact that every familiar form of reference to God found in other Hebrew wisdom literature is conspicuously absent. Koheleth's references are for the Hebrew, *sui generis*.

Is there then a God in Koheleth? In the first part of the book, you feel there is probably not; at the last, you know there is. At the first, there is no certainty of a power differentiated from the world order, as with the Ionic philosophers. At the last, all critics are so certain of such personality, that some have proposed to pare away portions as inconsistent or spurious. They are said to contain Christian, not Hebrew, conceptions of God. What is this but admitting Greek influence? For while illiterate people must generally think of God in Hebrew fashion, the *modes of thought* of educated classes remain essentially Greek. The whole method of "In Memoriam" is a familiar illustration.

What of the soul and the future, in Koheleth? As with the God idea, not a certain and lasting differentiation of it from the world-order at first; individuality and responsibility clear at the last. Reflection and conscience are Koheleth's salvation; he ever returns and communes with his own heart.

Is the final faith in God a definite return to "the faith

of the fathers"? Is there any exhortation thereto? We have already noticed the psychological difficulty in such rehabilitation. Had Koheleth been influenced by Greek humanists, he could not have returned to Yahvism or post-Exilic Judaism. But the Hebrew God idea would form a personality about whom to group Greek modes of thought. The ultimate God idea of Koheleth is often asserted to be the loftiest in the Old Testament. Hence some critics would pare it away. But considering the Greek method of approach to God, Koheleth will appear a unit. Every sentiment can be duplicated from Ionic philosophers and Attic humanists. Late Hebrew in dress, the book is Greek in thought. The hands are the hands of Esau, but the voice is the voice of Jacob.

Even the method of announcing the conclusion is a paraphrase of a Greek form of official announcement. Compare Æschylus, "Suppliants," 922 ff., where the king formally announces the local law to a foreign envoy: "Solemn is the decree of the popular assembly, and the nail has been driven through, that it may remain firmly fastened; it is not in tablets, or the folded leaves of books, but you hear it from my mouth."

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SCHOPENHAUER AS AN EVOLUTIONIST.

THE Absolute of the philosophy of Schopenhauer is notoriously one of the most complicated of all known products of metaphysical synthesis. Under the single, and in some cases highly inappropriate, name of "the Will" are merged into an ostensible identity conceptions of the most various character and the most diverse historic antecedents. The more important ingredients of the compound may fairly easily be enumerated. The Will is, in the first place, the Kantian "thing-in-itself," the residuum which is left after the object of knowledge has been robbed of all of the "subjective" forms of time and space and relatedness. It is also the Atman of the Vedantic monism, the entity which is describable solely in negative predicates, though at the same time it is declared to sum up all of the genuine reality that there is in this rich and highly colored world of our illusory experience. The Will is, again, the "Nature" of Goethe; it is the "vital force" of the late eighteenth and early nineteenth century vitalists in biology; and it is even the physical body of man and animals, in contrast with the mind. It is likewise the absolutely alogical element in reality, the "non-rational residuum," of the last period of Schelling's philosophy; and it is an apotheosis of that instinctive, naive, spontaneous, unreflective element in human nature, which had been glorified by Rousseau and, in certain of his moods, by Herder. It is Spinoza's "striving of each thing *in suo*

esse perseverare." It is the insatiable thirst for continued existence which the Buddhist psychology conceives as the ultimate power that keeps the wheel of existence in motion, and it is an hypostasis of the Nirvana in which Buddhism conceives that thirst to be extinguished.

Though thus singularly manifold, these elements are not all necessarily incongruous *inter se.* But, apart from minor discrepancies among them, they all fall into at least two groups, having attributes which obviously cannot be harmonized as characterizations of one and the same entity. The Will, in Schopenhauer, has manifestly a positive and a negative aspect; it is thought of now in concepts to which the name Will is truly pertinent, now in concepts to which that name is singularly unsuitable. In so far as the "Will" is a designation for the thing-in-itself, or for the Vedantic Absolute, it is a being which is not only itself alien to time and to space and to all the modes of relation, unknowable, ineffable, but is also *ipso facto* incapable of accounting for, or of being manifested in, a world of manifold, individuated, striving and struggling concrete existences. It is merely the dark background of the world of experience; it is the One which remains while the many change and pass. From the point of view of the world of the many and of change, it is literally nothing. To the understanding it is necessarily as inaccessible, and, indeed, as self-contradictory and meaningless, as is the Unknowable of Herbert Spencer,—of which it is, indeed, the twin brother, not to say the identical self. This kind of negative and inexpressible Absolute is a sufficiently familiar figure in the philosophy of all periods. Schopenhauer assuredly did nothing original in reviving it. What was original in his work was that he baptized this Absolute with a new, and startlingly inappropriate, name; and that he gave it this name because, in spite of himself, he was really interested in

quite another kind of "ultimate reality" of which the name was genuinely descriptive.

The other aspect of Schopenhauer's "Will" is, of course, that in which it appears, as Spencer's Unknowable intermittently appears, as a real agency or tendency in the temporal world, as a power which is not merely behind phenomena, but also is manifested *in* phenomena; and, more especially, as a blind urge towards activity, towards change. towards individuation, towards the multiplication of separate entities—each of them instinctively affirmative of its own individual existence and also of the character of its kind—towards the diversification of the modes of concrete existence, and towards a struggle for survival between these modes. When Schopenhauer speaks of the Will as a *Wille zum Leben,* it is sufficiently manifest that what he has before his mind is not in the least like the Oriental Brahm, "which is without qualities" and without relations and without change. It is, of course, true that Schopenhauer imagined that he had mitigated the baldness of the incongruity between the two aspects of the Will by calling the one reality and the other mere phenomenon, by insisting that the first sort of characterization tells us, so far as human language can, what the Will is in itself, while the second form refers only to the illusory appearance which the Will presents when apprehended by the understanding. But, as a matter of fact, it is quite clear that the characteristics of the world of phenomena, as Schopenhauer habitually thinks of it, are explicable much more largely by the nature of the Will than by the nature of the Understanding. Schopenhauer is fond of reiterating, for example, that space and time constitute the *principium individuationis;* but they are so only in the sense that they provide a means for logically defining individuality. It is very apparent that there is nothing in the abstract notion of either space or time which can explain why that pressure towards in-

dividuation, that tendency towards the multiplication of concrete conscious individuals, should exist. It is, after all, the Will that must be conceived to be responsible for its own objectification in a temporal and spatial universe; for, even from Schopenhauer's own point of view, there is nothing in the conception of the forms under which the Will gets objectified which can account for the necessity of such objectification. It was with the Will in its concrete sense, and in its restless, temporal movement, that Schopenhauer was more characteristically concerned; it was the ubiquity and fundamental significance of this trait of all existence which constituted his personal and novel *aperçu.*

Now the conception of the Will as a force or tendency at work in the world of phenomena is manifestly a conception which might have been expected to lead the author of it into an evolutionistic type of philosophy. Since the will is characterized as *ein endloses Streben,* as *ein ewiges Werden,* as *ein endloser Fluss*, and since we are told of it that "every goal which it reaches is but the starting point for a new course," its manifestations or products might, it would seem, most naturally be represented as appearing in a gradual, progressive, cumulative order. The phrase "will to live" readily, if not inevitably, suggests a steady movement from less life to more life and fuller, from lower and less adequate to higher and more adequate grades of objectification. But did Schopenhauer in fact construe his own fundamental conception in this way? An examination of his writings with this question in view makes it appear probable that at the beginning of his speculative activity he did not put an evolutionistic construction upon the conception of the Will; but it makes it very clear that in his later writings he quite explicitly and emphatically adopted such a construction, connecting with his metaphysical principles a thorough-going scheme of cosmic and organic evolution. Singularly enough, this significant change in

Schopenhauer's doctrine upon a very fundamental point, has, so far as I know, not hitherto been fully set forth. Not only the most widely read histories of philosophy, but even special treatises on Schopenhauer's system, represent his attitude towards evolutionism wholly in the light of his early utterances; and even where his later expressions upon the subject are not forgotten, their plain import has often been denied, upon the assumption that they must somehow be made to harmonize with the position taken in his early and most famous treatise.

In *Die Welt als Wille und Vorstellung* Schopenhauer is preoccupied chiefly with the negative and "other-worldly" aspect of his philosophy. His emphasis may, upon the whole, be said to be laid upon the consideration that the world of objects is but an illusory presentation of the Will, rather than upon the consideration that the Will is, after all, the kind of entity that presents itself in the guise of a world of objects and of minds. With this preoccupation, Schopenhauer delights to dwell upon the timelessness of the true nature of the Will. Yet, since even in his most mystical and nihilistic moments he is obliged to remember that the Absolute does somehow take upon itself a temporal form, this emphasis upon the eternity of true being did not of itself forbid his representing the temporal side of things as a gradual process of expansion and diversification. The passages in which Schopenhauer speaks of the timelessness of the Will ought not to be quoted, as they sometimes have been quoted, as constituting in themselves any negation of a developmental conception of the world in time; for such passages are not pertinent to the world in time at all. It is rather a subsidiary and somewhat arbitrary detail of his system, which he uncritically took over from Schelling, that leads Schopenhauer in this period to pronounce in favor of the constancy of organic species. Between the Will as a timeless unity and the changing

world of manifold phenomena he interpolates a world of Platonic Ideas, or archetypal essences of phenomena. This world, it is true, has only an ideal existence; it has, in a sense, not even the degree of reality that phenomenal objects have. But it has an important functional place in Schopenhauer's scheme of doctrine; since the Ideas, so to say, lay down the limits of diversity within which the phenomena may vary. Each individual being is in some degree different from every other, and the name of them is legion. But the generic forms, the kinds of individuals that there may be, are determined by the natures of the Ideas.

Now these Ideas relate primarily to the kinds of natural processes which Schopenhauer regards as the hierarchically ordered grades of the objectification of the Will,—mechanism, chemism, organism, etc. But it is evident that Schopenhauer also includes among the Ideas the timeless archetypes of each species of organism. Even from the fact that, upon Schopenhauerian principles, the pure form of each species is eternal, as it behooves a Platonic Idea to be, it could not necessarily be inferred by any cogent logic that the temporal copies of these forms need be changeless. Schopenhauer none the less does appear to draw, in a somewhat arbitrary manner, the inference that species must be everlasting and immutable. He writes, in the Supplement to the third book of *Die Welt als Wille und Vorstellung* (second edition, 1844):

> "That which, regarded as pure form, and therefore as lifted out of all time and all relations as the Platonic Idea, is, when taken empirically and as in time, the species; thus the species is the empirical correlate of the Idea. The Idea is, in the strict sense, eternal, while the species is merely everlasting (*die Idee ist eigentlich ewig, die Art aber von unendlicher Dauer*), although the manifestation of a species may become extinct upon any one planet."

So again (in the chapter on "The Life of the Species," *ibid.*, chapter 42) Schopenhauer writes:

"This desire [of the individuals of a species to maintain and perpetuate the characteristic form of their species], regarded from without and under the form of time, shows itself in the maintenance of that same animal form throughout infinite time (*als solche Tiergestalt eine endlose Zeit hindurch erhalten*) by means of the continual replacement of each individual of that species by another;—shows itself, in other words, in that alternation of death and birth which, so regarded, seems only the pulse-beat of that form (*εἶδος, ἰδέα, species*) which remains constant throughout all time (*jener durch alle Zeit beharrenden Gestalt*)."

These passages seem to be fairly clear in their affirmation of the essential invariability of species.

In *Der Wille in der Natur* in 1854[1] we find Schopenhauer passing a partly unfavorable criticism upon Lamarck, which at first sight undeniably reads as if he at that date still retained the non-evolutionistic position of his earlier treatise. He has been asserting that the adaptive characters of organisms are to be explained neither by design on the part of a creative artificer, nor yet by the mere shaping of the organism by its environment, but rather through the will or inner tendency of the organism, which somehow causes it to have the organs which it requires in order to cope with its environment. "The animal's structure has been determined by the mode of life by which the animal desired to find its sustenance and not *vice versa*.... The huntsman does not aim at the wild boar because he happens to have a rifle: he took the rifle with him, and not a fowling piece, because he intended to hunt boars; and the ox does not butt because it happens to have horns, it has horns because it intends to butt." This, of course, sounds very much like a bit of purely Lamarckian biology; and Schopenhauer is not unmindful of the similarity.

"This truth forces itself upon thoughtful zoologists and anatomists with such cogency that, unless their mind is purified by a

[1] This is the date of the second edition. The first edition appeared in 1836; to it I have not been able to have access.

deeper philosophy, it may lead them into strange error. Now this actually happened to a very eminent zoologist, the immortal De Lamarck, who has acquired undying fame by his discovery of the classification of animals into vertebrates and invertebrates, so admirable in profundity; for he quite seriously maintains and tries to prove at length that the shape of each animal species, the weapons peculiar to it, and its organs of every sort adapted for outward use, were by no means present at the origin of that species, but have, on the contrary, come into being gradually *in the course of time* and through continued generation, in consequence of the exertions of the animal's will, evoked by the nature of its situation and environment,—i. e., through its own repeated efforts and the habits to which these gave rise."

Schopenhauer then goes on to urge certain purely biological objections, which may for the moment be passed over, to what he conceives to be the Lamarckian hypothesis. The most serious misconception on Lamarck's part, however, he declares to arise from an incapacity for metaphysical insight, due to the unfortunate circumstance that that naturalist was a Frenchman.

"De Lamarck's hypothesis arose out of a very correct and profound view of nature; it is an error of genius, which, in spite of all its absurdity, yet does honor to its originator. The true part of it should be set down to the credit of Lamarck himself, as a scientific inquirer; he saw rightly that the primary element which has determined the animal's organization is the will of the animal itself. The false part of it must be laid to the account of the backward state of metaphysics in France, where the views of Locke and his feeble follower, Condillac, still hold their ground, and where, accordingly, bodies are supposed to be things in themselves, and where the great doctrine of the ideality of space and time and of all that is represented in them.... has not yet penetrated. De Lamarck, therefore, could not conceive his construction of living beings otherwise than as in time and succession....The thought could not occur to him that the animal's will, as a thing in itself, might lie outside time, and in that sense be prior to the animal itself. Therefore he assumes the animal to have first been without any clearly defined organs, and indeed without any clearly defined tendencies, and to have been equipped only with per-

ceptions. . . . But this primary animal is, in truth, the Will to Live; as such, however, it is metaphysical, not physical. Most certainly the shape and organization of each animal species has been determined by its own will according to the circumstances in which it needed to live; not, however, as a thing physical, in time, but on the contrary as a thing metaphysical, out of time."

As it stands this passage, apart from its context, unquestionably is most naturally interpreted as a rejection, not merely of the details of Lamarck's hypothesis, but also of the general doctrine of a gradual transformation of species in time. Its import has been so understood by a number of expositors of Schopenhauer. Thus Kuno Fischer writes: "Schopenhauer blames De Lamarck for representing animal species as evolved through a genetic and historical process, instead of conceiving of them after the Platonic manner."[2] So Rádl[3]: "Schopenhauer speaks in praise only of the Lamarckian doctrine that the will is the cause of organic forms; Lamarck's genetic philosophy, on the other hand, he rejects." But these writers have neglected to observe that, only a few pages later in the same treatise, Schopenhauer sets down an unequivocal though brief affirmation of the origination of species from one another through descent; and does so on the ground that without such an hypothesis the unity of plan manifest in the skeletal structure of great numbers of diverse species would remain unintelligible. In other words, Schopenhauer argues in favor of transformism by pointing to one of the most important and familiar evidences of the truth of the theory of descent, *viz.*, the homologies in the inner structure of all the vertebrates. In the neck of the giraffe, for example, (he remarks) we find, prodigiously elongated, the same number of vertebrae which we find in the neck of the mole contracted so as to be scarcely recog-

[2] *Arthur Schopenhauer*, 1893, p. 463.

[3] *Geschichte der biologischen Theorien*, II, 456 n.

nizable. This unity of plan, argues Schopenhauer, requires to be accounted for; and it can *not* be accounted for as one of the aspects of the general adaptation of organisms to their environment. For that adaptation might in many cases have been as well, or better, realized by means of a greater diversity in the architectural schemes of species having diverse environments and instincts.

"This *common anatomical factor* (*Element*) which, as has been already mentioned, remains constant and unchangeable, is so far an enigma,—namely, in that it does not come within the teleological explanation, which only begins after that basis is assumed. For in many cases a given organ mght have been equally well adapted to its purpose even with a different number and arrangement of bones. ....We must assume, therefore, that this common anatomical factor is due, partly to the unity and identity of the Will to Live in general, partly to the fact that the original forms of the various animals have arisen one out of another (*dass die Urformen der Tiere eine aus der andern hervorgegangen sind*), and that it is for this reason that the fundamental type of the whole line of descent (*Stamm*) has been preserved."[4]

And Schopenhauer himself adds a reference to a passage in the *Parerga and Paralipomena*[5] (to be examined below) in which, at much greater length, his own particular form of organic evolutionism is expounded.

Now, abundant in contradictions though Schopenhauer was, it is difficult to suppose that he can have expressed, within half a dozen pages, diametrically opposed views upon a perfectly definite and concrete question of natural science, in which he manifestly took an especial interest,—and that he can, in spite of his habit of carefully revising each edition of his works, have left such a piece of obvious self-contradiction standing in the final version of *Der Wille in der Natur*. If, now, bearing this in mind, we revert to the criticism of Lamarck which has not unnaturally mis-

[4] *Der Wille in der Natur*, 3d ed., 1878, p. 53.

[5] To § 91 of the first edition, 1851 (= § 93 of the second edition).

led hasty readers of Schopenhauer, we shall see that what is criticized is *not* necessarily the doctrine of the derivation of species from earlier species by descent, but only a specific theory of the manner in which "the Will" works in the formation of species. Lamarck, at least as Schopenhauer understood him, placed behind every organ or function of all animals, as its cause and temporal antecedent, a *felt* need, a conscious desire, leading it to the activities by means of which that organ is developed. To this Schopenhauer objects, in the first place, that the hypothesis implies that if we should go back to the beginning of the series of animals we should come to a time in which the ancestor of all the animals existed *without any organs or functions at all,* in the form of a *mere* need, a desire pure and simple;—which implication he regards as reducing the hypothesis to an absurdity. This is an entirely pertinent criticism upon Lamarck's explanation of specific characters as the results of use and disuse of organs, in so far as that explanation is taken as the sole explanation. The criticism applies, not only to the origination of animal organs and functions in general, but also to the origination of any particular class of organs and functions. It is difficult to see how an animal, yearn it never so strongly, can develop an organ out of its needs merely as such; or how it can modify by use or disuse a type of organ of which it is not yet in possession. Given the rudiments of an eye, with a specific visual sensibility, and it is at least abstractly conceivable that the persistent utilization of such a rudimentary organ might somehow lead to its further development; but some sort of eye must necessarily first be given. In other words, Lamarckianism (as apprehended by Schopenhauer) did not sufficiently recognize that the primary thing in species-forming must be the appearance (through obscure embryogenetic processes with which conscious needs and desires can have nothing to do) of suitable congenital variations.

The essence of Lamarck's error, as Schopenhauer sees it, is that, according to the French naturalist, "it is the will which arises out of knowledge," i. e., out of the animal's temporally antecedent consciousness of its own need; whereas, in fact, "the will did not proceed from the intellect, nor did the intellect exist, together with the animal, before the will made its appearance." We cannot even say that the will, in the sense of a definite concrete volition, existed before the production of the organ requisite to make the fulfilment of the given kind of volition possible in an animal species. In short, Schopenhauer's doctrine was that the timeless Will, working in time in the form of a blind purposiveness, gives rise to the organs and the potencies of new species by producing new congenital characters *before* any felt need for and endeavor after those characters have arisen; while Lamarck's doctrine, as Schopenhauer believed, was that an actual (though doubtless vague) awareness of need, and a concrete movement of conation, temporally precede the production of each new character or organ. The two doctrines were really distinct; but (as will presently more fully appear) the one was as definitely evolutionistic as the other.

It was, furthermore, an objection in Schopenhauer's eyes to Lamarck's theory (and would have doubtless been urged by him as an objection to the Darwinian theory) that it supposed species to have been formed by the gradual enlargement and accumulation of characters too small and trivial at their first emergence to be functionally significant, or useful in the struggle for survival. He says,

> "Lamarck overlooks the obvious objection.... that, long before the organs necessary for an animal's preservation could have been produced by such endeavors as these carried on through countless generations, the whole species must have died out from the want of them."

Schopenhauer, after his definite adoption of evolutionism, always insisted not only upon the primacy of the fact of variation in the explanation both of species-form and of adaptation, but also upon the doctrine that, though one species descends from another, it descends *ready-made*. In other words—and in twentieth-century words—Schopenhauer was, in his view concerning species, a mutationist, though one of a somewhat extreme and peculiar sort.

In interpreting the bearing of Schopenhauer's comments on Lamarck in *The Will in Nature* I have, of course, been guided not only by the context of that passage, but also by the passage in the *Parerga and Paralipomena* to which, as has been mentioned, he himself refers his reader for a fuller exposition of his views on the question of species. The latter passage occurs in the small treatise (Chapter VI of *Parerga and Paralipomena*) entitled *Zur Philosophie und Wissenschaft der Natur*, perhaps the most important of its author's later writings, but one which has been amazingly neglected by the historians of philosophy and even by writers of special monographs on Schopenhauer. With the publication of this work (1850)[6] he quite unmistakably announced—what remained his final view—that the philosophy of nature to which his metaphysics of the Will properly led was of a frankly and completely evolutionistic type. Since this part of the *Parerga and Paralipomena* (unlike most of the rest of that collection) has, so far as I know, never been done into English, I shall, in setting forth the teachings of it, for the most part simply give a translation of Schopenhauer's own words.[7]

Organic life originated, Schopenhauer declares, by a

[6] It is evident from the references in *The Will in Nature* that the evolutionistic passages occurred in the first edition of *Zur Philosophie und Wissenschaft der Natur*, though in the text of the second edition from which I shall quote (published posthumously, 1861) they are amplified by additions written by Schopenhauer as late as 1859 or 1860.

[7] What immediately follows is based upon *Parerga und Paralipomena*, II, §§ 90-94, 74, 87.

generatio aequivoca of the organic (under certain definite physical conditions) out of the inorganic; indeed, he believed, with singular scientific naïveté, that spontaneous generation is an everyday occurrence, taking place "before our eyes in the sprouting of fungi from decaying vegetable matter." But only the simplest forms can have been thus produced.

"*Generatio aequivoca* cannot be conceived to occur in the higher grades of the animal kingdom as it does in the lowest. The form of the lion, the wolf, the elephant, the ape, or that of man, cannot have originated as do the infusoria, the entozoa and epizoa,—cannot have arisen directly from the sea-slime coagulated and warmed by the sun, nor from decaying organic substances. The genesis of these higher forms can be conceived of only as a *generatio in utero heterogeneo*,[8]—such that from the womb, or rather from the egg, of some especially favored pair of animals, when the life-force of their species was in them raised to an abnormal potency, at a time when the positions of the planets and all the atmospheric, telluric and astral influences were favorable, there arose, exceptionally, no longer a being of the same kind as its parents, but one which, though of a closely allied kind, yet constituted a form standing one degree higher in the scale. In such a case the parent would for once have produced not merely an individual but a species. Processes of this sort naturally can have taken place only after the lowest animals had appeared in the usual manner and had prepared the ground for the coming races of animals."

The reader will observe in the account of the conditions requisite for the production of these exceptional births traces of Schopenhauer's queer weakness for occultism; but the condition which he chiefly insists upon is less remote from the range of conceptions sanctioned by modern natural science. The productive potency of organisms, "which is only a special form of the generative power of nature as a whole," undergoes this "abnormal heightening" when it encounters antagonistic forces, conditions tending to re-

[8] Birth from a parent belonging to a different species from that of the offspring; "heterogenesis," in Kölliker's phrase.

strict or destroy it; "it grows with opposition." This tendency, for example, manifests itself in the human race in times of war, pestilence, natural catastrophes, and the like; and in such periods of special intensification of the power of reproduction, that power, Schopenhauer seems to conceive, shows also a greater instability and variability, a tendency to the production of new forms which thereafter remain constant. Now, says Schopenhauer,—adopting the geological system of Cuvier,—a renewal of life through *generatio aequivoca,* followed by an increasing multiplication of diverse descendant species, must have taken place "after each of those great revolutions of the earth, which have at least thrice extinguished all life upon the globe so that it required to be produced anew, each time with more perfect forms, i. e., with forms more nearly approximating our existing fauna. But only in the series of animals that have come into being subsequently to the last of these great catastrophes, did the process rise to the pitch of producing the human race,—though the apes had already made their appearance in the preceding epoch."

We have seen Schopenhauer in *The Will in Nature* declaring in favor of the theory of descent on the ground that it affords the only possible explanation of the homologies of the skeletons of the vertebrates. In the present writing he still more emphatically declares in favor of it on the ground of the argument from recapitulation,—of the parallelism of the ontogenetic and the phylogenetic series.

"The batrachians visibly go through an existence as fishes before they assume their characteristic final form, and, according to a now fairly generally accepted observation, all embryos pass successively through the forms of lower species before attaining to that of their own. Why, then, should not every new and higher species have originated through the development of some embryo into a form just one degree higher than the form of the mother that conceived

it? This is the only reasonable, i. e., the only rationally thinkable, mode of origination of species that can be imagined."

Schopenhauer was thus, as I have already said, not only an evolutionist in his biology but also a mutationist; his speculations are prophetic of the theory of De Vries rather than that of Darwin. But the scale on which he supposed these "discontinuous variations" to occur is calculated to make our contemporary mutationists stare and gasp; the changes of form which he assumed are saltatory indeed. He writes:

"We are not to conceive of this ascent as following a single line, but rather as mounting along several lines side by side. At one time, for example, from the egg of a fish an ophidian, and afterwards from the latter a saurian arose; but from some other fish's egg was produced a batrachian, from one of the latter subsequently a chelonian; from a third fish arose a cetacean, possibly a dolphin, some cetacean subsequently giving birth to a seal, and a seal finally to a walrus. Perhaps the duckbill came from the egg of a duck, and from that of an ostrich some one of the larger mammals. In any case, the process must have gone on simultaneously and independently in many different regions, yet everywhere with equally sharp and definite gradations, each giving rise to a persistent and stable species. It cannot have taken place by gradual, imperceptible transitions."

The implication with respect to the simian descent of man Schopenhauer does not shirk:

"We do not wish to conceal from ourselves the fact that, in accordance with the foregoing, we should have to think of the first men as born in Asia from the pongo (whose young are called orang-outangs) and in Africa from the chimpanzee—though born men, and not apes....The human species probably originated in three places, since we know only three distinct types which point to an original diversity of race—the Caucasian, the Mongolian and the Ethiopian type. The genesis of man can have taken place only in the old world. For in Australia Nature has been unable to produce any apes, and in America she has produced only long-tailed monkeys,

not the short-tailed, to say nothing of the highest, i. e., the tailless apes, which represent the next stage before man. *Natura non facit saltus.* Moreover, man can have originated only in the tropics; for in any other zones the newly generated human being would have perished in the first winter.... Now in the torrid zones man is black, or at least dark brown. This, therefore, without regard to diversities of race is the true, natural and distinctive color of the human species; and there has never existed a race white by nature."

Schopenhauer does not leave us without a hint as to the writer from whom he learned his evolutionism; though—never generous in his acknowledgments, and always prepared to think the worst of the English—he is a good deal more copious in criticism than in appreciation of that writer.

"The conception of a *generatio in utero heterogeneo* which has here been expounded was first put forward by the anonymous author of the *Vestiges of the Natural History of Creation* (6th ed., 1847), though by no means with adequate clearness and definiteness. For he has entangled it with untenable assumptions and gross errors, which are due in the last analysis to the fact that to him, as an Englishman, every assumption which rises above the merely physical —everything metaphysical, in short—is forthwith confused with the Hebraic theism, in the effort to escape which, on the other hand, he gives an undue extension to the domain of the physical. Thus an Englishman, in his indifference and complete barbarism with respect to all speculative philosophy or metaphysics, is actually incapable of any spiritual (*geistig*) view of Nature; he knows no middle ground between a conception of it as operating of itself according to rigorous and, so far as possible, mechanical laws, and a conception of it as manufactured according to a preconceived design by that Hebrew God whom he speaks of as its "Maker." The parsons, the English parsons, those slyest of all obscurantists, are responsible for this state of things."

This can scarcely be considered a very clear and coherent criticism of Robert Chambers. But the passage makes it appear highly probable that it was through becoming acquainted, late in the eighteen-forties, with the

mutationist evolutionism of Chambers's *Vestiges,* that Schopenhauer was led to adopt and to develop in his own fashion a similar doctrine.

These transformist opinions in biology were, in the treatise *Zur Philosophie und Wissenschaft der Natur,* merely a part of a thorough-going scheme of evolutionism, which included a belief in the development of the chemical elements out of an original undifferentiated *Urstoff,* in the gradual formation of the solar system, and in an evolutionary geology.[9] His cosmogony Schopenhauer takes over from Laplace. The general outlines of the history of our planet, as he conceives them in the light of the geology of Cuvier, are set forth in a passage which is interesting enough to be worth quoting at length:

"The relation of the latest results of geology to my metaphysics may be briefly set forth as follows: In the earliest period of the globe, that preceding the formation of the granitic rocks, the objectification of the Will to Live was restricted to its lowest phases—i. e., to the forces of inorganic nature—though in these it manifested itself on the most gigantic scale and with blind impetuosity. For the already differentiated chemical elements broke out in a conflict whose scene was not merely the surface but the entire mass of the planet, a struggle of which the phenomena must have been so colossal as to baffle the imagination.... When this war of the Titans had spent its rage, and the granite rocks, like gravestones, had covered the combatants, the Will to Live, after a suitable pause and an interlude in which marine deposits were formed, manifested itself in its next higher stage—a stage in sharpest contrast with the preceding—namely, in the dumb and silent life of a purely plant-world.... This plant-world gradually absorbed carbon from the atmosphere, which was thus for the first time made capable of sustaining animal life. Until this was sufficiently accomplished, the long and profound peace of that world without animals continued. At length a great revolution of Nature put an end to this paradise of plants and engulfed its vast forests. Now that the air had been purified, the third great stage of the objectification of the Will began, with the appearance of the animal world: in the sea, fishes and cetaceans; on land, only

[9] *Op. cit.,* Section 74.

reptilia, though those were of colossal size. Again the curtain fell upon the cosmic stage; and now followed a still higher objectification of the Will in the life of warm-blooded animals;—although these were chiefly pachydermata of genera now extinct. After another destruction of the surface of the globe, with all the living things upon it, life flamed up anew, and the Will to Live objectified itself in a world of animals exhibiting a far greater number and diversity of forms, of which the genera, though not the species, are still extant. This more complete objectification of the Will to Live through so great a multiplicity and variety of forms reached as high as the apes. But even this, the world just before ours, must needs perish, in order that the present population of the globe might find place upon fresh ground. And now the objectification of the Will reached the stage of humanity.

"An interesting incidental consideration, in view of all this, is that the planets which circle round the countless suns in all space—even though some of them may be still in the merely chemical stage, the scene of that frightful conflict of the crudest forces of Nature, while others may be in the quiet of the peaceful interlude—yet all contain within themselves those secret potencies from which the world of plants and animals must soon or late break forth in all the multiplicity of its forms....But the final stage, that of humanity, once reached, must in my opinion be the last, for this brings with it the possibility of the negation of the Will, whereby there comes about a reversal of the whole inner tendency of existence (*der Umkehr vom ganzen Treiben*). And thus this *Divina Commedia* reaches its end. Consequently, even if there were no physical reasons which made certain a new world-catastrophe, there is, at all events, a moral reason, namely, that the world's continuance would be purposeless after the inmost essence of it has no longer need of any higher stage of objectification in order to make its deliverance (*Erlösung*) possible."

It is thus clear that by 1850 Schopenhauer had reformulated his conception of the "objectification of the Will" in thoroughly evolutionistic terms and had incorporated into his philosophy a complete system of cosmogony and phylogeny.[10] It was at about the same time that Herbert

[10] It is a singular illustration of the present condition of the historiography of scientific and philosophical ideas, that this fact is ignored, and Schopenhauer's position represented as essentially anti-evolutionistic, in such reputable

Spencer was beginning to imagine the outlines and primary principles of the *Synthetic Philosophy,* which has commonly passed for the first comprehensive attempt by any nineteenth-century philosopher to generalize the conception of evolution and to give to it the principal rôle in his system. The two doctrines may, in truth, not uninstructively be set side by side. They exhibit, in the first place, a degree of resemblance which is likely to be overlooked by those who can not discern, beneath diversities of terminology and of emphasis, identities of logical essence. In both systems, for example, the ultimate nature of things is placed beyond the reach of temporal becoming. Spencer's evolutionary process belongs only to the realm of "the knowable," Schopenhauer's to the world of the Will as objectified; behind the one stands, as true reality, the Unconditioned, alien to all the characters of human experience and all the conceptions of human thought; behind the other stands the Will as it is in itself, timeless, indivisible, ineffable. In other words, both systems consist of an evolutionary philosophy of nature projected against the background of an essentially mystical and negative metaphysics. Yet each, as I have already remarked, regards its supratemporal and indeterminate Absolute as the very substance and sum of the world in time; and each is prone to the same inconsistency, that of practically treating this same Absolute as the real ground and explanation of becoming and as a power at work in the temporal movement of things. In the degree of emphasis which they lay upon this negative element in their doctrine, the two philos-

histories of philosophy as those of Höffding, Windelband, Kuno Fischer (who devotes a whole volume to Schopenhauer); in Rádl's *Geschichte der biologischen Theorien* (II, 457); in Von Hartmann's *Neukantianismus, Schopenhauerianismus und Hegelianismus* (1877, pp. 150-151); and in P. Schultz's special article on "Schopenhauer in seinen Beziehungen zur Naturwissenschaft" (in *Deutsche Rundschau,* 1899). Most of the histories of philosophy which do not contradict the fact, at least fail to mention it. It is, however, correctly though concisely set forth in Frauenstädt's *Neue Briefe über die Schopenhauersche Philosophie,* 1876, p. 193, and in Dacqué's *Der Descendenzgedanke und seine Geschichte,* 1903, p. 82.

ophers, no doubt, greatly differ. Spencer closes the door upon it after half a dozen chapters, and then forgets it for whole books at a time,—reverting to it only at the moments when his logic seems, in the deduction of the laws of "the knowable," to be on the point of breaking down.

Schopenhauer, too, can forget the obscure background of existence when he is absorbed in the concrete phenomena of evolution; but he takes it, on the whole, more seriously, and draws the veil from before it more frequently. And the more closely Kantian affinities of his epistemology create for him a difficulty in adjusting his evolutionism to his metaphysics which Spencer seemingly escapes,—though he escapes it only by an evasion. Since, for Schopenhauer, space and time are subjective forms of perception, premental evolution, the formation of planetary systems and of planets themselves before the emergence of consciousness, necessarily has for him an especially equivocal ontological status.

"The geological processes which took place before there was any life on earth were present in no consciousness;. . . . from lack of a subject, therefore, they had a merely objective existence, i. e., they were not at all. But what is meant then by speaking of their 'having been' (*Dagewesensein*)? The expression is at bottom purely hypothetical; it means that *if* any consciousness had been present in that primeval period, it *would have* then observed those processes. To them the regress of phenomena leads us back; and it therefore lay in the nature of the thing in itself to manifest itself in such processes [i. e., if there had been any consciousness for it to manifest itself to]."

When Spencer declares that our conceptions of space and time are modes of thought produced *in us* somehow by the Unconditioned, but not ascribable to that entity itself, he involves himself in a similar difficulty about early geological time, and implies an identical way of dealing with the difficulty; but so far as I can recall, he does not anywhere directly face the question.

The points of resemblance between the system of Schopenhauer and that of Spencer, however, consist chiefly in the general fact that both were evolutionists, and that their evolutionist cosmology had much the same sort of metaphysical setting. In its spirit, as in its details, Schopenhauer's evolutionism was essentially different from Spencer's. He is, but for some faint foreshadowings in the philosophy of certain of the Romantics, the first representative of a tendency in evolutionistic philosophy that is essentially hostile to the tendency of which Spencer is the representative. Spencer's enterprise is neither more nor less than a resumption of that which Descartes had undertaken in 1633, in his suppressed treatise on "The World"; the nineteenth-century philosopher, like the one of the seventeenth century, conceives it possible to deduce from the laws of the motion of the parts of a conservative material system the necessity for the gradual development of such a world as we now find. Spencer's evolutionism, in short, is, or rather attempts to be, thoroughly mechanistic. And in the course of the whole process, therefore, (though Spencer frequently forgets this) no real novelties can appear except novelties in the spatial arrangement of the particles of matter. Even these novelties are only the completely predetermined consequences of the sum of matter and energy originally present in the universe, and of the laws of relative motion. The whole cosmic history is solely a process of redistribution of matter and change of direction in motion. It is for this reason that M. Bergson is fond of saying of Spencer that his system contains nothing that really has to do with either becoming or evolution; "he had promised to trace out a genesis, but he has done something quite different; his doctrine is an evolutionism only in name."

Schopenhauer's evolutionism of the ever-expanding, self-multiplying Will, however, is radically anti-mechanistic. For it the universe, even the physical universe, can

not be a changeless closed system, in which no truly new content ever emerges. The primary characteristic of the Will is that it is never satisfied with the attained, and therefore ever goes on to further attainment. Its objectification, in the latest phase of Schopenhauer's thought, becomes necessarily progressive and cumulative. In short, a philosophy which conceives the genesis and movement of the temporal world in terms of the Will necessarily gives a very different account of the biography of the cosmos from that presented by a philosophy which aspires to tell the whole story in terms of mechanics and in accord with the principle that the ultimate content of nature never suffers increase or diminution. This latter program Spencer, it is true, realizes very imperfectly. In the later volumes of the *Synthetic Philosophy* the *First Principles* seem often pretty completely forgotten. There are not a few strains of what may be called the romantic type of evolutionism in Spencer. But in him these strains are incongruous with the primary postulate of his system; in Schopenhauer they are the characteristic note of the whole doctrine.

This contrast between the two types of evolutionism found in these two writers is due in part to certain features in their respective doctrines which arose without dependence upon their evolutionism| They had essentially opposed preconceptions about the program and possibilities of science. Spencer was from his youth obsessed with the grandiose idea of a unification of all knowledge. All truths were eventually to be brought under some "highest generalization which is true not of one class of phenomena, but of all classes of phenomena, and which is thus the key to all classes of phenomena." This, of course, meant the theoretical possibility of the reduction of the more complex sciences to the simpler ones—of physiology to chemistry, of chemistry to physics, and of all physics to the mechanics of molecules. This intellectual process of

explanation of the more complex by the simpler and more generalized type of phenomena was the counterpart, and in truth a necessary implication, of the objective process of evolution of simple into more complex arrangements of the matter of the universe. Schopenhauer, on the other hand, from the beginning insisted upon the irreducibility of the several sciences to one another, and most emphatically upon the uniqueness and autonomy of biology. When science, he writes, "in the quest for causal explanations (aetiology) declares that it is its goal to eliminate all ultimate forces except one, the most general of all (for example, impenetrability) which science flatters itself upon thoroughly understanding; and when, accordingly, it seeks to reduce (*zurückzuführen*) by violence all other forces to this single force, it then destroys its own foundation and can yield only error instead of truth. If it were actually possible to attain success by following this course, the riddle of the universe would finally find its solution in a mathematical calculation. It is this course that people follow when they endeavor to trace back physiological effects to the form and composition of the organism, this perhaps to electricity, this in turn to chemism, and this finally to mechanism."[11] Just why Schopenhauer adopted this doctrine of the irreducibility and discontinuity of scientific laws at a period when he apparently had not adopted evolutionism, is not wholly clear. He seems to have been partly led to such a view by his conception of the Platonic Ideas. Since for each of the broad divisions of science, which correspond to grades of objectification of the Will, there is a separate Idea, Schopenhauer seems to have felt that the distinctness of the several Ideas forbade the supposition of the complete reducibility of the laws of one science to those of a prior one. But inasmuch as the whole notion of the Platonic Ideas is a logically irrelevant part of the

[11] *Die Welt als Wille und Vorstellung*, § 27.

Schopenhauerian system, this explanation does not carry us very far. Whatever his reasons, the fact remains that Schopenhauer attached the utmost importance to his contention that, at the points where one typical phase of the Will's self-manifestation passes over into a higher one, new modes of action, essentially different kinds of being, must be recognized. Consequently, when he eventually arranged the grades of the Will's objectification in a serial, temporal order, thus converting his system into an evolutionism, this contention made his evolutionism one which implied the repeated production of absolute novelties in the universe, and the supervention from time to time of natural laws supplementary to, if not contradictory of, the laws or generalizations pertinent to the phenomena of a lower order.

Another detail of Schopenhauer's body of doctrine which likewise antedates the evolutionistic transformation of his system but yet has an important relation to certain subsequent developments in the philosophy of evolution, was his peculiar form of teleology. He was equally opposed, on the one hand, to the conception of design as an explanation of the adaptive characters of organisms, and on the other hand to the mechanistic elimination of all purposiveness from nature. Between these two extremes he endeavored to find room for a teleology dissociated from anthropomorphism. The Will moves towards ends determined by its own inner nature, though it does not foresee these ends. It triumphs over obstacles in its way, and circumvents obstructions; but it does so blindly and without conscious devices. This notion of a blind purposiveness, which more than any other philosopher Schopenhauer may be said to have introduced into the current of European philosophy, has come in our own day to be a familiar conception in the interpretation of the meaning of evolution, especially in its biological phase. Here again Schopen-

hauer is the precursor of Bergson. That contemporary too rejects what he calls *le finalisme radical* not less than the radical mechanistic doctrine, while insisting upon the indispensability of some notion of finality in any attempt to comprehend the development of organisms. From this point of view Bergson has objected, upon grounds altogether similar to those which have been noted in Schopenhauer's reference to Lamarck, to the Lamarckian tendency to identify the cause of the production of new characters with "a conscious effort of the individual"; while he at the same time regards Lamarckianism as approaching far nearer than does Darwinism, with its essentially mechanistic interpretation of organic evolution, to a correct representation of the developmental process. Like Schopenhauer, M. Bergson adopts, as the biological theory most congenial to his metaphysics of the *poussée vitale*, a combination of the doctrines of orthogenesis and of mutation. The later writer may or may not have been influenced by the earlier one, but there can be no doubt that in Schopenhauer we find the first emphatic affirmation of the three conceptions most characteristic of the biological philosophy of *L'évolution créatrice*.

It is a somewhat curious circumstance that the trait in Schopenhauer's conception of the action of the "objectified" Will which has hitherto most attracted the notice of writers on the history of biology is closely related to the fundamental conception of precisely that sort of organic evolutionism to which he was most opposed. The universal prevalence of a struggle for existence among organisms was eloquently set forth by Schopenhauer forty years before [illegible]vin published the *Origin of Species*. But it seems to have occurred to Schopenhauer to regard this [illegible]gle as an explanation of the formation of species [illegible]he adaptation of organisms to their environments. he was unlikely to do so is evident from all that has

been already said. The Darwinian hypothesis makes of species and their adaptive characteristics merely the result of a sort of mechanical pressure of external forces. Slight promiscuous variations, due probably to fortuitous displacements in the molecules of the germ-cell, are conserved or eliminated in the course of the jostle for survival, according as they do or do not fit the individuals possessing them to keep a footing in that turmoil. But such a doctrine assigns to the organism itself, and to its inner potencies, an essentially passive rôle; development is, as it were, extorted from living things by external circumstances, and is not a tendency expressive of all that is most characteristic in the nature of organisms as such. The metaphysician whose ruling conception was that of a cosmic life-force was debarred by the dominant temper of his thought and the deepest tendency of his system from any such account of the causes and the meaning of that progressive diversification of the forms of life, the reality of which he clearly recognized. Thus, though Schopenhauer incidentally shows certain affinities with Darwinism, he is much more truly to be regarded as the protagonist in nineteenth century philosophy—at just the time when Darwin was elaborating a mechanical biology and Spencer a would-be mechanistic cosmogony—of that other form of evolutionism which a recent French writer has described as "a sort of generalized vitalism."[12] He was thus the first important representative of the tendency which, diversely combined with other philosophical motives, and expressed with varying degrees of logical coherency, has been chiefly represented since his time by such writers as Nietzsche, Bernard Shaw, Guyau, E. D. Fawcett, and Bergson. The romantic evolutionism of all these writers is, it is true, innocent of the pessimistic coloring of Schopenhauer's philosophy; but the pessimism of Schopenhauer was always connected rather

[12] M. René Berthelot, *Evolutionnisme et Platonisme*, p. II.

with those preconceptions in his doctrine which were really survivals from older systems, than with that vision of the Will as creatively at work in the temporal universe which was his real contribution to the modern world's stock of metaphysical ideas. When his philosophy had been converted, as we have seen that it was converted even by himself, into an evolutionism, it was already ripe for the elimination of the pessimistic strain.

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THE ATTACK OF CELSUS ON CHRISTIANITY.

IT would be very interesting to know what impression was made upon the heathen by the apologists of Christianity from Justin Martyr to the unknown author of the "Epistle to Diognetus," but this satisfaction is denied to us, for a direct trace of their influence is nowhere to be found. Even Celsus, in whose time a number of apologetic writings were still extant, gives them so little attention that we cannot tell whether he had read them or not.

It is clear that a religion which entered the arena in such a manner could no longer be ignored. The policy of purposely ignoring Christianity was forever at an end. In place of the obscure rumors which had heretofore been so frequently the source of the popular information about Christianity, there were now literary works which it was impossible to disregard, and which afforded to every one who took an interest in the subject an opportunity of forming his own independent judgment. Indeed these works challenged their readers to form such an opinion by the very tone in which they were writtten. The farther a man's acquaintance with Christianity extended, the less was it possible for him to close his eyes to the importance this religion had acquired as a new phenomenon of the age. Men could not but feel the necessity for going seriously and thoroughly into the question with regard to what Christianity actually meant and what was its claim to truth. It was impossible now merely to put it aside with

scorn and contempt. If a man could place no belief in Christianity, it was necessary to go a step farther and make an attempt to refute it; and as such investigations brought into ever clearer light the whole wide difference between the Christian and the heathen views of the world, men were forced to go back to the ultimate principles on which the one and the other were based.

"That among the enemies of Christianity in the second half of the second century men were not wanting who were impressed to the utmost with the importance of this question, is proved by the remarkable work written against Christianity by the Greek philosopher Celsus. Of Celsus himself we have no further knowledge. The title of his work was 'The True Word',[1] and by it he doubtless meant to indicate the love of truth which had induced him to enter upon this refutation of Christianity. The work itself has been lost, but Origen, in the eight books of his reply, has preserved abundant extracts from it to attest sufficiently the earnestness with which the author pursued his aim, and the pains and care he expended on the work" (Baur). Neander says: "In this book we certainly perceive a mind which would not consent to surrender itself to the system of any other individual; we find ourselves in contact with a man who, by combining the ideas predominant in the general philosophical consciousness of his time, the popular ideas—so to speak—of that period, had framed a system of his own of which he felt rather proud, and which, after he had appeared as a polemic in his work against the Christians, it was his intention to unfold in another performance under a more positive form. In his second work he meant to show how it would be necessary for those to live, who were willing and able to follow him. Whether this plan has ever been executed we are not informed."

The work of Celsus has been saved through its refu-

[1] ἀληθὴς λόγος.

tation by Origen, who in the latter part of his life[2] undertook the task of replying to Celsus at the request of his friend Ambrose.[3] With great reluctance Origen took up the work. Besides the fact that he was more than sixty years of age at the time,[4] he was of the conviction that Christianity itself was the best defence against the attacks since it "rests on facts, and that power of Jesus which is manifest to those who are not altogether devoid of perception."[5] However the thought that there might be some persons who could have their faith shaken and overthrown by the writings of Celsus,[6] made him yield to the request of Ambrose, and step by step he refutes the charges made by the heathen assailant, meeting him at all points with rare subtlety and acuteness as well as with immense stores of knowledge, both biblical and literary, "by virtue of which he is able effectually to retort upon the heathen philosopher every charge brought against the system of the gospel." The mass of details, indeed, is often tedious. Many questions which Origen discusses eagerly have lost their interest and meaning now. There are, as might be expected, some applications of scripture which will hardly bear the test of a sound criticism;[7] but, with every drawback, the treatise must always hold its place as the great apologetic work of Christian antiquity.[8]

[2] In the reign of Philip the Arabian (Eusebius I, 2), A. D. 244-279.

[3] "Against Celsus," pref. 1. According to Eusebius VI, 18, this Ambrose was converted from the heresy of Valentinus to the faith of the church by the efforts of Origen.

[4] Eusebius, VI, 36.

[5] "Against Celsus, pref. 3.

[6] *Ibid.*, pref. 4.

[7] In reply to the objection taken by Celsus against the slaughter of the Canaanites, and the imprecatory language of the Psalms, Origen boldly spiritualizes both. For instance in Ps. cxxxvii, "The little ones," he says "of Babylon (which signifies confusion) are those troublesome sinful thoughts which arise in the soul, and he who subdues them by striking, as it were, his heart against the firm and solid strength of reason and truth is the man who 'dasheth the little ones against the stones,' and he is, therefore, truly blessed" (VII, 22).

[8] Green, *loc. cit.*, p. 110 f.

It has been conclusively proved by Neumann that the eight books against Celsus were composed by Origen in the year 248. As to the place of composition Keim[9] thought it might be Rome, others Alexandria. The latest editor of Origen's works, Professor Koetschau,[10] suggests Cæsarea. However this may be, this refutation as we now have it, is one of the ripest and most valuable productions of Origen, and of the whole ancient apologetic literature. And yet he did not know who this Celsus was, whether he lived in the reign of Nero or that of Hadrian.

Modern scholars assign Celsus to the period from A. D. 150 to 178; the accepted opinion, however, is that he wrote his attack in the year 178 in the time of Marcus Aurelius. Some scholars think that Origen passed over a great deal of the original work; his latest editor however is of the opinion that the work of Celsus can be reconstructed with tolerable completeness from Origen's reply, an opinion which has been previously held by Mosheim, Neander, Tzschirner, and others. Various efforts have been made to construct a restoration of Celsus from the work of Origen, and by none perhaps so successfully as by the late Theodor Keim[11] whose arrangement has been followed more or less closely by later writers. Twenty years after Keim (in 1892), Koetschau[12] published a systematic arrangement of the parts of the "True Word," which he republished in the introduction to his edition of Origen's works.[13]

In the following pages we have adopted Koetschau's arrangement, interspersing passages from Origen and notes and elucidations from other scholars, which will not

[9] *Celsus' Wahres Wort*, p. 274.
[10] Origen, Vol. I, p. xxiii.
[11] *Celsus' Wahres Wort*, Zurich, 1873.
[12] *Jahrbücher f. d. protestantische Theologie*, XVIII, (1892), pp. 604-632.
[13] Vol. I (1899), pp. li-lvi.

only be of interest to our readers, but will help them to understand the points in question.

INTRODUCTION.

Book I, 1-27.

A. The Christians are to be blamed because
   1. their organization is illegal (I, 1; comp. VIII, 17);
   2. their teaching is barbarous (I, 2), arbitrary (I, 3), not new (I, 4, 5);
   3. their power rests on magic (I, 6);
   4. they demand an irrational belief (I, 9).

On this latter point Neander remarks (p. 164): "How the divine foolishness of the gospel, the faith whereby the highest truth was to be made the common property of all mankind, must needs appear to the twilight wisdom and aristocratic culture of the ancient world, may be seen in those remarks of Celsus wherein he complains that the Christians refused to give reasons for what they believed, but were ever repeating, 'Do not examine, only believe; thy faith will make thee blessed. Wisdom is a bad thing in life, foolishness is to be preferred.'"

B. An examination of the contents and origin of the Christian teaching (I, 12) shows that
   1. Judaism must be condemned on account of its separation (I, 14-26) [For which there is no cause, because Moses derived everything from other nations and sages];
   2. Christianity recently founded[14] by Jesus, the leader, and accepted almost entirely by ignorant people, has no right to exist (I, 26, 27) [He cannot deny however that among the Christians "there are some men, sensible, well-disposed, intelligent and skilled in allegorical interpretation," I, 27].

[14] Suetonius in *Nero* 16 also speaks of Christianity as *superstitio nova et malefica*.

FIRST PART.

Books I, 28—II, 79.

The Objections of Celsus to the Christian Doctrine from the Standpoint of Judaism.

A. The Jew invented by Celsus endeavors to prove that Jesus is not the expected Messiah (I, 28-71) because
1. he is not divinely born (I, 28-39);
2. he is not acknowledged by God (I, 41-58);
3. he is not approved by deeds (I, 61-68);
4. he is not bodily constituted like a god (I, 69-71).

It is interesting to observe how history repeats itself. Canon Farrar in speaking of the English deist Woolston (1669-1733), author of the celebrated *Discourses on the Miracles,* says: "Occasionally, when wishing to utter grosser blasphemies than were permissible by law or compatible with his assumed Christian standpoint, he introduced a Jewish rabbi, as Celsus had formerly done, and put the coarser calumnies into his mouth" (Discourse IV and Defence, sect. I).[15]

On this Jew invented by Celsus, Neander remarks: "The Jew whom he introduces as an opponent of Christianity, is made to say that he had many true things to state in relation to Christ's history altogether different from those reported by the disciples, but he purposely kept them back. Yet Celsus, whose perfect hatred of Christianity led him to collect together everything that could be said with the least show of probability against it, would not have failed, certainly, to avail himself of such accounts, if they were really within his reach. We must consider this, therefore, with Origen, as one of those rhetorical tricks of which Celsus set the example for later antagonists of Christianity."[16] And says Baur: "Before Celsus ap-

[15] *A Critical History of Free Thought,* p. 137.

[16] *Loc. cit.,* p. 169.

pears in his own person, a Jew comes forward to take the part of Judaism, and the author's objections are placed in his mouth. The object of this was not only to give dramatic life to the scene of the controversy, but also and chiefly to eliminate those parts of the dispute which the Jew could bring forward from his own point of view, and so to give more sharpness and weight to those principal objections which form the loftier contention of the heathen opponent, and the ultimate decision regarding which was only to be found in philosophy. In this distribution of the parts the Jew had to take up all the points affecting the credibility and inner probability of the evangelical history."[17]

What is it that this supposed Jew has to bring forward? He asserts that the virgin birth has been invented by Jesus. He was in fact born in a wretched Jewish village, secretly and in adultery, of a poor peasant woman (who was not even beautiful, who was a spinner and seamstress, and who was betrothed at the time) after her bridegroom, who was a carpenter, had heard of her connection with a soldier Panthera,[18] and had cast her out in shame and misery, in spite of all the eloquence of her defense. Jesus was forced by need and poverty to become a hireling in Egypt. But there he learned various secret arts, and in reliance on these he returned home, where he proclaimed himself to be God, and in vanity and pride, untruthfulness and impiety, he misled the people from their faith, especially since he was liberal enough to admit others to the sonship of God. He, together with John, the companion of his execution, invented the voice from heaven at the Jordan, and made use of deceitful tricks of juggling for his miracles, which failed in the critical hour. With ten or eleven miscreants, publicans and sailors, the vilest of men, he went about the country begging his bread with difficulty, and in shameful

[17] *Loc. cit.*, p. 143.

[18] See Pick, article "Panthera" in McClintock and Strong's *Cyclop.*

flight, after he had been declared an outlaw. His performances were neither noble nor wonderful either in deed or in word. When challenged in the temple to exhibit some unmistakable sign that he were the Son of God, he refused to comply. Even if it is admitted that all is true that his disciples say regarding his cures, or his resurrection, or the feeding of a multitude with a few loaves from which many fragments remained over, or those other stories which the disciples have recorded as of a marvelous nature; are not the tricks of the jugglers, who profess to do more wonderful things, of a like nature, and because they perform such feats, shall we of necessity conclude that they are "sons of God," or must we admit that their deeds are the proceedings of wicked men under the influence of an evil spirit?

Jesus claimed to be the son of God. But, says the Jew addressing Jesus, "Such a body as yours would not have belonged to God. The body of God would not have been so generated as were you, O Jesus. The body of a god is not nourished with such food. The body of a god does not make use of such a voice as did you, nor employ such a method of persuasion. These tenets were those of a wicked and God-hated sorcerer."

This in the main is an outline of the address of the would-be Jew to Jesus, as contained in the first book. In the second book the Jew addresses Jewish Christians.

B. The Jew reproaches the Jewish Christians for having forsaken the law of the fathers (II, 1-73) because
   1. Jesus is not the Messiah, as his life proves (II, 5-13);
   2. the prophecies of Jesus were invented after his death by his disciples (II, 13-27);
   3. the prophecies do not fit Jesus (II, 28-32);
   4. Jesus neither proved his Messiahship, nor did he win faithful adherents (II, 33-46);

5. The alleged reasons for forsaking the law of the fathers:
   a. Jesus was punished because of Satan (II, 47);
   b. Jesus performed cures (II, 48, 49);
   c. Jesus foretold his resurrection and did actually rise (II, 54-73)
   can easily be shown as being of no account.

C. The Jew finally asserts that
1. the Christians are refuted from their own writings (II, 74, 75);
2. Jesus himself admits the weakness of his cause (II, 76-79).

That Jesus was not the Messiah may be seen from the fact that he was betrayed by his own followers and was punished by the Jews for his crimes. What he said regarding the resurrection of the dead, the divine judgment and the fire which is to devour the wicked, is not new, but the repetition of stale opinions. Jesus was an arrogant fellow, and many other persons would appear as great as he to those who were willing to be deceived. The Jews are charged with not believing in Jesus as in God. But why should they deem him to be a god, who not only, as was currently reported, performed none of his promises, but who even after they had convicted and condemned him as deserving of punishment, was found attempting to conceal himself, and endeavoring to escape in a most disgraceful manner, and who was betrayed by those whom he called disciples? And yet, if he were a god he could neither flee nor be led away a prisoner; and least of all could he be deceived and delivered up by those who had been his associates, had shared all things with him in common, and had had him for their teacher, whom they deemed to be a Saviour, and a son of the greatest God, and an angel.

As to the so-called prophecies, they were invented by his followers. They lied clumsily at one time in the geneal-

ogy of Jesus, in which they bring him into connection with the Father of all men and with the old kings of Judah; at another ludicrously when they make it credible that he foretold his own death; and their power of lying is truly shown to this day, since they hold on to each other like drunken men, and three or four times, or even endlessly, alter and falsify the principal and best passages of the Gospels in order to offer better resistance to objections. In addition to the lies there are forced solutions and interpretations of prophecy; the prophets are made to proclaim all the acts of Jesus, although their words would in fact be more fit for any other than for him. It may be—says Celsus—that Jesus told his disciples he would rise again. But others have made similar vain boasts. Besides we learn from the myths of men who have risen again. All such stories are pure myths. "Or do you suppose," asks Celsus, "that the statements of others are myths and are so regarded, while you have invented a becoming and credible climax to your drama in the voice from the cross when he expired, and in the earthquake and the darkness? That while alive he was of no assistance to himself, but that when dead he rose again and showed the marks of his punishment, and how his hands were pierced with nails? Who beheld this? A half-crazy woman,[19] as you state and some

[19] Here we have the very beginning of the so-called "vision hypothesis," as still held by modern theologians. Like Celsus of old Renan says (almost blasphemously), that "the passion of an hallucinated woman gave to the world a risen God!" (La passion d'une hallucinée donne au monde un Dieu resuscité, *Life of Jesus*, ch. 26). In his work on the Apostles, Renan enters more fully into the question and again emphasizes, in the genuine style of a French novelist, the part of the Magdalene. "La gloire de la résurrection" (he says, p. 13) "appartient à Marie de Magdala....La grande affirmation de femme: 'Il est resuscité!' a été la base de la foi de l'humanité." The vision theory has been adopted by German, French and Dutch writers. Among English writers the anonymous author of *Supernatural Religion* is its chief representative, and states it in these words (Vol. III, 526, London ed. of 1879): "The explanation which we offer and which has long been adopted in various forms by able critics, is that doubtless Jesus was seen, but the vision was not real and objective, but illusory and subjective; that is to say, Jesus was not himself seen, but only a representation of Jesus within the minds of the beholders." We may add that scholars like Ewald, Schenkel, Alex. Schweizer and Keim have essentially modified this theory by giving the resurrection visions an *objective* character and representing them as real though purely spiritual manifestations

one else perhaps of those participating in the system of delusion, who either dreamed he had seen it owing to a peculiar state of mind, or under the influence of a wandering imagination had constructed for himself such a phenomenon according to his own wishes, as has been the case with numberless individuals; or, and this is most probable, had desired to impress others with this portent and by such a falsehood to furnish an occasion to imposters like himself." If Jesus had really risen, Celsus asserts, he would certainly have appeared before his judges and the public in general; and his critic finds it very strange that Jesus during his life preached to all and found no recognition, but that when he had risen, and could so easily have induced all to believe in him, he appeared only to one insignificant woman and to his associates, and that secretly and timidly. All this, the Jew states, is conclusive proof that Jesus "was therefore a man, and of such a nature as the truth itself proves, and reason demonstrates him to be."

PART II.

Books III-V.

Objections of Celsus to the Fundamentals of Christian Doctrine.

A. *General* objections (III, 1-81). The Christian doctrine is to be rejected

from heaven of the exalted Christ. While the vision theory has many advocates yet some of the ablest of them have had to make concessions. Thus Baur of Tübingen (died 1860), the master critic among skeptical church historians, and the corypheus of the Tübingen school, came at last to the conclusion (as stated in the revised edition of his "Church History of the First Three Centuries," published shortly before his death, 1860) that "nothing but the miracle of the resurrection could disperse the doubts which threatened to drive faith itself into the eternal night of death. For the faith of the disciples the resurrection of Jesus became the most solid and most irrefutable certainty. In this faith only Christianity gained a firm foothold for its historical development. We must rest satisfied with this, that for the disciples the resurrection of Christ was a fact of their consciousness, and had for them all the reality of an historical event" (pp. 39, 40). Dr. Keim (died 1879) in his last word on the great problem comes to the conclusion that we must either humbly confess our ignorance with Dr. Baur or return to the faith of the apostles who "have seen the Lord" (John xx. 25). See the third and last edition of his abridged *Geschichte Jesu*, Zurich, 1875, p. 362.

1. because it indicates the abandonment of the Jewish doctrine and leads to further division (III, 1-14);
2. because it brings forward nothing new or important but only things borrowed and deceitful (III, 16-43);
3. because it is intended only for the ignorant (III, 44-55) and the wicked (III, 59-71), but not for the wise and good;
4. because the Christian teachers are deceivers and seducers (III, 72-81).

Part II is thus described by Baur: "Celsus himself speaks of the rôle played by the Jew as merely the prelude to his dialectical contest with Christianity. The dispute between Jews and Christians is in his eyes so foolish as to be compared with the proverbial dispute about the shadow of an ass. The points in dispute between them are of no importance. Both believe that the Holy Spirit has prophesied the advent of a redeemer of mankind; what they contend about is merely whether or not the prophecy has come to pass. What has now to be done, accordingly, is to impugn those presuppositions on which both Jews and Christians proceed, and with them, of course the supernatural view of the world on which both these religions are based.

"Before coming forward with the weightiest arguments which belong to this place, Celsus expresses in various turns of thought his general view of Christianity, which is that, generally speaking, he finds nothing in it deserving of respect and acceptance. Christianity as a whole reposes on no real foundation of reason. As the Jews broke away from the Egyptians on account of religious dispute, so with the Christians also, caprice and the desire of innovation, sedition and sectarianism[20] compose the element in which they

[20] On this point Neander speaks as follows: "In opposing to Christianity the many conflicting opinions which it called forth, Celsus testifies against himself. How could a religion of base faith, a religion that called the unenlightened and repelled the wise of this world, give birth to such a multitude of heresies? If he had not been so superficial an observer, he could not have

move. Only on these things and on the fear which they inspire in others, especially through the terrifying pictures which they draw of future punishments, do they found their faith (III, 5 f., 14). Far more reasonable than the Christians with their belief in Jesus, are the Greeks with their belief in Heracles, Asclepios, Dionysos, who, though men, were accounted gods because of their meritorious acts; with their legends of Aristeas of Proconnesus, the Hyperborean Abaris, Hermotimus of Clazomenae, Cleomedes of Astypalaea, who, though the same things were told of them as of Jesus, were not therefore held to be gods. The worship which the Christians offered to their Jesus was not better than the cult of Antinous by Hadrian. They have no reason to laugh at the worshipers of Zeus because his grave was pointed out in Crete, for they did not know what the real meaning of the Cretans was, and they themselves worship a buried man (III, 22, 26 f., 36, 43). What sort of a religion Christianity is may easily be seen from the circumstances that it has no men of cultivation, no wise or reasonable men among its adherents, while ignorant and foolish people may confidently join its ranks; such persons do Christians hold to be worthy of their God, and they openly declare that they neither will nor can have any others among them.

As the Christians of that age belonged for the most part to the lower orders of society, Celsus made great use of this fact in enumerating the characteristics of Christianity. The Christians appeared to him to belong to the class of those who engage in their low trades in public places and do not enter any respectable society. In houses of

failed to be struck with this contradiction; and in endeavoring to solve it he must have had his attention directed to that peculiarity by which Christianity is so clearly distinguished from all preceding phenomena in the intellectual world. Celsus was of the opinion that these oppositions of knowledge, so hotly conflicting with each other, would bring about the dissolution of Christianity. But history has decided against him; it has shown how the indwelling power of unity in Christianity could overcome these oppositions, and make them subservient to its own ends" (*loc. cit.*, pp. 164 f.).

wealth one meets with workers in wood, shoemakers, dyers, uncultivated and ill-mannered people who dare not open their mouths before the masters of the house, men of more cultivation and ability. But if once these crude people can gain access to the wives and children of their masters, they say the most extraordinary things, and represent to them that they should not hold to their fathers and teachers, but should follow only the precepts of these Christian servitors; their fathers and teachers, they are told, are under the power of vanity and can do nothing right; the Christians also know how one ought to live, and if the children follow them they will be happy and make the house fortunate (III, 50, 52, 55). Celsus thinks this none too harsh a judgment on the Christians.

A still greater reproach which he brings against them is that while in other mysteries only the pure, those who are not conscious of guilt, those who have lived good and righteous lives, are summoned to purge themselves from their transgressions, the Christians, on the contrary, promise to every sinner, every fool, every miserable person, that he will be received into the kingdom of God. Celsus takes special offense at this preference shown by Christianity to sinners, and its doctrine of the forgiveness of sins. He holds broadly that forgiveness of sins is not possible. Every one knows, he says, that those who have confirmed by habit their natural tendency to sin are not changed by punishment and still less by indulgence. Entirely to change our nature is the most difficult thing of all. Nor does the forgiveness of sins allow of being harmonized with the idea of God. According to the Christian representation of him, God is like those who allow themselves to be softened by pity. Because of pity for the wretched he makes the path easy for the wicked; but the good, who do nothing wrong, he rejects. Christians think, indeed, that God can do any-

thing; but it is plain that their doctrine can not obtain the approval of any reasonable man" (III, 63, 65, 70, 71).

Having shown that Christianity fails to commend itself to reason, Celsus endeavors to prove how its unreasonableness becomes still more apparent when inquiry is made as to the ultimate grounds on which it rests. "It presupposes a special manifestation and revelation of God; it is to the notion of revelation that one ultimately comes in seeking the reason of Christianity. Celsus attacks this notion with arguments which have been brought forward again and again from his time downwards, to disprove the possibility of revelation in general; and he not only does this but he reduces the main question at issue to the great difference between the theistic and the pantheistic views of the world, in such a way as to exhibit the whole width of the difference between the two standpoints."

B. *Special* objections (books IV, V.)

I. The assumption of a descent of God or of a son of God is wrong, and therefore the Jewish-Christian teleology (IV, I-V, 2),

1. because no cogent reason can be adduced for the descent of God (IV, 3-11, 79);
2. because it would contradict the nature of the immutable and good deity to change for the worse and come in contact with matter (IV, 14-18);
3. because the special reasons of Jews and Christians for this doctrine
   a. are in themselves untenable and a proof of great arrogance (IV(20-23);
   b. are to be rejected, because of the untrustworthy authorities (IV, 31-35) and because of the nonsensical stories contained in their writings (IV, 36-47), which cannot even be interpreted allegorically (IV, 48-53).

Taking up these three points of the special objections,

Celsus makes the following statements which we reproduce in the words of Baur: "The question at issue between Christians and Jews, whether God or the son of God has descended to the earth in the past or is still about to descend, is, he holds, a contemptible subject of contention. The question is, what rational conception can be formed of such a descent of God at all? (IV, 2, 3). Why did God descend to earth? To see how things were faring with men? But did he not know everything? He knew it, did he? And yet he did not set it right, and could not set it right with his divine power. He could not set it right without some one being sent down for this purpose. Perhaps, since he was still unknown to men and considered that on this account something was wanting to him, he wished to be known by them and to see who would and who would not believe. To this Celsus himself gives the answer that as far as God is concerned he has no need to be known, but that he gives us the knowledge of himself for our profit. Then he asks, Why did so long a time elapse before God conceived the notion of setting the life of men right? Did he never think of that before? (IV, 8).

"To get still closer to the root of the matter, Celsus goes back to the notion of God. He says he has no intention of saying anything new, but only what has long been recognized. God is good, beautiful, blessed; he is the sum of all that is fairest and best. If he descends to men a change must take place, but this change is a transition from good to bad, from beautiful to ugly, from blessed to unblessed, and who could wish for such a change for himself? Again, while it belongs to the nature of the mortal that it can change and be transformed, the immortal remains always equal to itself. Thus such a change as Christianity presupposes is essentially impossible for God. The Christians think that God can actually change himself into a mortal body, but as this is impossible, we should be driven to think

that without actually undergoing it, he gave himself the appearance of such a change for those who saw him. But if this were the case, he would be lying and deceiving. Lies and deceit are always bad and are only to be used as remedies either in the case of friends, to cure them when they are ill and out of their senses, or as against enemies, to escape from danger. But neither can be the case with God (IV, 14, 18).

"As concerns the special reasons for such a descent, the Jews assert, according to Celsus, that since life is filled with all sorts of wickedness, it is necessary that a messenger should come from God to punish the wicked and purify all things in the same way as at the time of the flood. The Christians modify this statement, and say that the Son of God has already been sent because of the sins of the Jews, and that the Jews because they punished him with death and gave him *cholé,*[21] 'gall,' to drink, have drawn down upon themselves the *cholos,*[22] 'wrath,' of God. The scorn of Celsus at once fastens upon this. Jews and Christians alike are compared to a flock of bats, or to ants that creep forth out of their nests, or to frogs sitting around a swamp, or worms holding an assembly in a corner in the mud, and debating on the question which of them are the greatest sinners. 'It is to us,' say the frogs, 'that God declares everything before it comes to pass; and for our sake he leaves the whole world, heaven and earth, and comes to sojourn with us; to us alone does he send his messengers, and he can not escape sending one messenger after another, because it is of the greatest importance to him that we should be with him always.' The worms say: 'God is, and we are made after him, in all things like him; he has put everything in subjection to us, earth, water, air, and stars; all things are for our sake, and are intended for our service; but because there are some of us who have erred,'

[21] χολή. [22] χόλος.

the worms say, 'God will come, or will send his Son to burn up the wicked and cause the rest to have eternal life with him.' Such wranglings would be more endurable amongst worms and frogs than between Jews and Christians" (IV, 23).

Knowing the connection between the Old and New Testaments, Celsus now attacks the Old Testament and ridicules it. By undermining the foundation he means to ruin the whole structure. Aside from its political character, this part of Celsus's work is very interesting, because it shows us his acquaintance with the Old Testament.

The Jews, Celsus says, are runaway slaves from Egypt and have never done anything to distinguish themselves. In order to trace their descent from the most ancient jugglers and beggars, they appeal to ancient ambiguous and mysterious sayings which they explain to ignorant and foolish people. Sitting in their corner in Palestine, they, knowing nothing of Hesiod and other inspired men in their entire want of culture, invented the crudest and most incredible account of the creation. Their story states[23] that a certain man was formed by the hands of God, and into him was breathed the breath of life; that a woman was taken from his side; that God issued certain commands which a serpent opposed, gaining a victory over the commandments of God. They thus relate certain old wives' fables, and most impiously represent God as weak at the very beginning and unable to convince even a single human being whom he himself had formed (IV, 36).[24] They speak in the next place of a deluge, and of a monstrous ark having within it all things, and of a dove and a crow as messengers, falsifying and recklessly altering the story of Deucalion, not expecting that these things would come to light but imagining that they were composing stories

[23] What follows is passed over by Baur.

[24] Comp. Gen. i-iii.

merely for young children (IV, 41).[25] Altogether absurd and out of reason is the account of the begetting of children,[26] of the conspiracies of brothers,[27] of the father's sorrow,[28] of the crafty procedure of mothers[29]; also the story that God presented his sons with asses, and sheep, and camels,[30] also wells to the righteous.[31] Mention is likewise made of marriages and of various acts of sexual intercourse recorded of righteous persons,[32] of young women and female servants, of daughters, worse than the crimes of Thyestes;[33] of the hatred of brothers; of the sally to revenge the insult offered to a sister;[34] of brothers selling; of the brother sold and the father deceived.[35] Dreams of the chief butler and chief baker and of Pharaoh are told and their interpretation is given in consequence of which he who had been sold as a slave was taken out of prison and was entrusted by Pharaoh with the second place in Egypt.[36] He who had been sold behaved kindly to his brethren (who had sold him), when they were suffering from hunger and had been sent with their asses to purchase provisions; then, he who had been sold as a slave, after being restored to liberty, went up with a solemn procession to his father's funeral.[37] By him (Joseph) the illustrious and divine nation of the Jews, after growing up in Egypt to be a multitude of people, was commanded to

[25] Comp. Gen. vi-viii.

[26] Reference is no doubt to Abraham and Sarah, Gen. xvii, 16-19; xviii. 11; xxi. 2.

[27] Cain and Abel, Esau and Jacob, Gen. iv. 8; xxvii. 41, 42.

[28] Either of Isaac at the flight of Jacob, Gen. xxviii. 2 ff., or of Jacob at hearing of Joseph's death, Gen. xxxvii. 33 ff.

[29] Gen. xxvii. 5 ff.

[30] See Gen. xiii. 2; xxx. 43; xxxii. 14.

[31] See Gen. xvi. 14; xxi. 19; xxvi. 22; Num. xxi. 16.

[32] Reference is either to Abraham and Hagar, Gen. xvi, or to Judah and Thamar, Gen. xxxv.

[33] Lot's Daughter, Gen. xix. 31-38.

[34] See Gen. xxvii. 41 ff. and xxxiv.

[35] Gen. xxxvii.

[36] Gen. xl. 5; xli. 1 ff.

[37] Gen. xlii. 1 ff.; l. 1 ff.

sojourn somewhere beyond the limits of the kingdom, and to pasture their flocks in districts of no repute, till the people finally fled from Egypt (IV, 47). The more modest Jewish and Christian writers give all these things an allegorical meaning because they are ashamed of them (IV, 48). However, some of the stories do not even admit of an allegory, but on the contrary are exceedingly silly inventions (IV, 50). The allegorical explanations which have been devised are much more shameful and absurd than the fables themselves, inasmuch as with marvelous and altogether insensate folly they endeavor to unite things which can not at all be made to harmonize (IV, 51). In proof of this he refers to the treatise entitled "Controversy between Jason and Papiscus Regarding Christ."[38]

Another of the special objections of Celsus is,

4. because the Jewish-Christian notion of the order of nature[39] is radically false (IV, 52—V, 2), for

a. God has created nothing that is mortal (IV, 52-61);

b. the amount of evil is a fixed quantity, which has never varied (IV, 62-73);

c. natural history teaches that God did not make all things for man, but that this world as a work of God is to be perfect in all things (IV, 73-99);

d. the angels of which the Christians speak, are nothing but demons (V, 2).

According to Celsus God made only what is immortal. Only the soul is the work of God; the body has another nature. As the nature of the whole is ever one and the same, so there is always the same measure of evils in the world (IV, 54, 62). Evil is not from God but is attached to matter and to mortal natures, in whose periodical change

[38] Celsus speaks of this work rather contemptuously, whereas Origen deems it useful for ordinary readers. It is usually ascribed to Aristo of Pella of the second century. See Schlürer, *Geschichte des jüdischen Volkes*, Vol. I (3d ed., 1901) pp. 63-65.

[39] φύσις.

past, present and future remain ever the same (IV, 65). Thus man is not the object of the world at all, but all individual existences arise and pass away solely for the preservation of the whole, and what appears to one or other of the individuals to be an evil is not in itself evil if it is of advantage to the whole. In order to refute the teleological position that God made everything for man, Celsus enters into a detailed comparison of men with the brutes, in which he finds a counter-advantage on the side of the latter for every advantage which he allows to the former. So far is this argument carried that men are made to stand below rather than above the brutes. At the close of this argument (IV, 73-98) he expresses his general view of the world thus: "The world, then, is not made for man any more than for the lion, or the dolphin, or the eagle. It is made solely to be a work of God perfect in itself in all its parts. The individuals in it have reference to each other only in so far as they have reference to the whole. God cares for the whole; his providence forsakes it not, nor does it grow worse. God does not retire for a time into himself. He is no more angry at men than he is at apes or flies; all the particular parts of the world have received their definite and appropriate places" (IV, 99).

Baur says (p. 152): "This in the main is the view which has continued from the time of Celsus to the most modern times to be the chief opponent of the supernaturalistic belief in revelation, and the development of which, from the rude form which it has with Celsus to a theory founded in philosophy, has only rendered it the more dangerous. If the world is a whole, complete in itself, then God and the world are essentially connected with each other, and can only be thought in a relation of immanence to each other. All particular, teleological, supernatural elements at once disappear in the all-embracing unity of the whole, and the notion of revelation loses its entire justification, its root in

the philosophy of things being cut away; for if there is no God different from the world, standing above the world, and operating on it by his personal will, then there can be no revelation in the sense conceived by Jews and Christians. God and the world exist one in the other. Everything moves in the same order, standing fast once for all in an eternal circle which even returns into itself.

Uhlhorn comments as follows: "There is a very striking coincidence here between the oldest antagonist of Christianity and Strauss, its most modern foe. Just as with Celsus, so with Strauss, the principal argument against Christianity is the impenetrable connection of the order of nature; and like Celsus, Strauss also finally arrives at denying any design in the world. Its purpose is that it is. There will come, he explains, a time when the earth will no longer be inhabited, yea, when the very planet will no longer exist, and when not only all earthly things, all human occupations and achievements, all nationalities, works of art and science, shall have vanished, but not even a recollection of it shall endure in any spirit, since with this earth, its history must naturally perish. Then either the earth has failed to accomplish its purpose, since nothing has been evolved in its existence, or that purpose did not consist in any thing which should endure, but was accomplished at every moment of the world's development. Like Celsus, Strauss denies any improvement or deterioration in the world. The same statement which we have just read in Celsus, we read again in *The Old Faith and the New* by Strauss.[40] 'The universe is in no succeeding moment more perfect than in the preceding, nor *vice versa*.' So clearly indeed do these two antagonists of Christianity agree, that like Celsus Strauss endeavors to obliterate the distinction between man and animal. 'The chasm between

[40] *Der alte und der neue Glaube*, p. 228 (3d Engl. ed., London, 1874, Vol. II, p. 37.

man and animal,' he says, 'was first opened by Judaism which is hostile to the gods of nature, and by Christianity which is dualistic'; and it sounds like the voice of Celsus when we read, 'The more carefully the life and habits of any species of animals are observed, the more does the observer find reason to speak of their understanding. . . . A kind of sense of honor, a sort of conscience, is hardly to be ignored in the better bred and cared-for horses and dogs." Strauss discovers even 'the rudiments of the higher moral faculties' in animals, and bees, ants and elephants play the same parts in his arguments as with Celsus.[41]

"It has seemed of interest to bring out the parallel between this time of the church's conflict and the present day. Do the modern enemies of our faith know of no objections to bring forward, except those which were advanced by our first antagonist seventeen hundred years ago? If so, then they are refuted before they write. For Celsus is refuted, I do not mean by Origen's answer, though this presses him very hard, but by the fact that the faith he scorned has triumphed."[42]

Having objected to the assumption of a descent of God or of a son of God and thus to the Jewish-Christian teleology as being wrong, Celsus now goes to prove

II. that neither Jews (V, 6-11) nor Christians (V, 51-65) deserve thus to be preferred by the deity:

1, Not the Jews, because

a. they have a deficient worship of God (V, 6);

b. they have an abominable doctrine of judgment and the resurrection of the body (V, 14);

c. they live indeed according to the law of their fathers (V, 25-34), but arrogantly consider themselves better than other nations, from whom they partly derived their customs (V, 41);

[41] Strauss *loc. cit.*, pp. 200, 202 f. (Engl. ed. II, pp. 11, 13-15).

[42] Uhlhorn, *The Conflict of Christianity* (Engl. ed.) p. 303 f.

2. Not the Christians, who are still more unworthy, because
   a. they left Judaism, and are without national laws and customs (V, 33, 51);
   b. they make contradictory statements concerning messengers and angels of God (V, 52, 54);
   c. they have the most varied notions concerning the deity and therefore represent the greatest opposites (V, 59-64), though they are one in self-exaltation with reference to other nations, even the Jews (V, 64, 65).

"Celsus," says Baur, "stands here at the height of his polemic against Christianity, as the champion of a view opposed to it in principle. But he fails to maintain this lofty standpoint. The pantheistic view of the world being intimately associated in his mind also with the polytheism of the old religion, he could not escape the question whether the position of polytheism necessarily yielded the same judgment on Christianity as he had been led to form from the standpoint of pantheism. If it can not be allowed to Christianity that the one supreme God descended to the earth, yet it may be that, in the founder of it, one of those higher superhuman beings appeared, whose existence was taken for granted by Christians, Jews and heathens equally, although under different names—Jews and Christians calling them angels, and the heathens demons. In this view all the arguments as yet brought against Christianity would fail to prove that it was not of higher divine origin. This is the point at which Celsus stands (V, 2) when he says to the Jews and Christians that neither God nor God's son had come or would come down to the world; but if they mean angels, they ought to say what they understand under that name, whether gods, or beings of another kind, demons. This, then, we should expect to be the further question now to be discussed. Still it is strange that

Celsus makes no attempt at a direct answer to the question, but, as if he felt it necessary to concede the possibility that Christianity might be a divine revelation in this sense, leaves that subject and turns to the contents of the religion of the Jews and Christians, attacking them now on this point, now on that. Especially does he seek to gain advantage over them by contrasting their system with Greek philosophy and religion. Scarcely have angels been mentioned, when he wonders that the Jews, although they worship heaven and the angels in it, pay no homage to the most exalted and most powerful beings, the sun, moon and stars (V, 6).

Celsus then turns to the next point, the doctrine of the resurrection. On this subject he says: "It is folly on their part to suppose that when God, like a cook, introduces the fire which is to consume the world, all the rest of the human race will be burned up while they alone will remain, not only such of them as are then alive but also those who are long since dead, which latter will arrive from the earth clothed with the selfsame flesh as during life. Such a hope is simply one which might be cherished by worms, for what sort of human soul is that which would still long for a body that has been subject to corruption? Whence, also, this opinion of yours is not shared by some of the Christians, and they pronounce it to be exceedingly vile, and loathsome, and impossible, for what kind of body is that which, after being completely corrupted, can return to its original nature, and to that selfsame first condition out of which it fell into dissolution? Being unable to return any answer, they betake themselves to a most absurd refuge, viz., that all things are possible to God. And yet God cannot do things that are disgraceful, nor does he wish to do things that are contrary to his nature. God is the reason of all things that exist, and therefore can do nothing either contrary to reason or contrary to himself" (V, 14).

Continuing, Celsus concedes to the Jews that they have the same right to their own national legislation that other nations have to theirs, while the Christians are deserters from the Jews. The Jews should by all means give up thinking that they with their laws are wiser and better than others. Let this band (i. e., the Jews) then take its departure, after paying the penalty of its vaunting, not having a knowledge of the great God, but being led away and deceived by the artifices of Moses, having become his pupil to no good end (V, 15-41).

Having dismissed the Jews, Celsus turns now to the Christians, conceding to them that their teacher is actually an angel, but insisting that he did not come first or alone, but that others came before him, as those also maintain who suppose a higher God and father distinct from the Creator of the world (V, 52). This proves that both Jews and Christians have the same God, and this is admitted by the members of the great church who adopt as true the accounts regarding the creation of the world which are current among the Jews, viz., concerning the six days and the seventh on which day God rested. They also mention the first man from whom they deduce the same genealogy. They also speak of the conspiracies of brothers against one another, of the descent into Egypt and of the flight thence (V, 59). Nevertheless, Celsus goes on, some concede that their God is the same as that of the Jews, while others maintain that he is a different one, to whom the latter is in opposition, and that it was from the former that the Son came. And there are some who accept Jesus and boast on that account of being Christians, and yet regulate their lives, like the Jewish multitude, in accordance with the Jewish law. There are Christians who are believers in the Sibyl; Simonians who worship Helene, or Helenus, as their teacher, and are called Helenians, Marcellians, Harpocratians, Marcionites, etc. (V, 62). Some

take this one, others take another as their teacher and demon, but utter against one another dreadful blasphemies, hating each other with a perfect hatred (V, 63). Yet all these, though assailing each other with the most shameless language, utter the words, "the world is crucified to me, and I unto the world" (V, 64). And yet, much as they differ among one another, they say that they are possessed of greater knowledge than the Jews (V, 65).

PART III.

Books VI, 1—VII, 58.

Objections of Celsus to Several Christian Doctrines, that They Are Borrowed and Adulterated from Greek Philosophy.

1. The demand of the Christians that their teachings must be unconditionally believed is a misunderstanding and adulteration of the Platonic view that the chief good cannot be described and is only knowable to a few (VI, 3-11).

On this point Celsus argues that even if Christianity contains some elements that might prepossess a man of understanding in its favor, it has no monopoly of these, that these things are common property and have been said far better by the Greeks before and without those threats and promises about God or a son of God. Plato, he says, did not promulgate his doctrines as supernatural revelations, nor shall the mouth of any one who wished to inquire into the truth of them for himself. He made no demand that we should first of all believe; he did not say, God is so, or so; he has such a son, and he himself has come down into the world and has spoken with me (VI, 8). On every point, even when the subject of investigation does not admit of further explanation, Plato brings forward reasonable arguments; he does not pretend to be the discoverer of something new, or to have come from heaven to reveal it, but says where he got it (VI, 10). When some of the

Christians appeal to this authority and some to that and all alike insist, "Believe if you wish to be saved, or else go your way," what are those to do who are in earnest in wishing to be saved? Are they to appeal to the dice for a decision in what direction they shall turn, or to whom they shall give heed? (VI, 11).

2. The teaching of the Christians that the wisdom that is among men is foolishness with God is derived from Heraclitus and Socrates in order to attract the ignorant (VI, 12-14).

3. The Christian exhortation to humility, repentance and poverty is derived from Plato (VI, 15, 16).

4. The Christian cardinal doctrine of the kingdom of God is unworthy to be recorded (VI, 17), because

a. the doctrine of a super-celestial God is Platonic but misunderstood;

b. the doctrine of the seven heavens is borrowed from the Persians or the Cabiri (VI, 23);

c. the Christian mystery concerning the fate of the soul ascending to God is borrowed from the Mithraic mysteries (VI, 23-34);

d. connected with this is the Christian magic and sorcery (VI, 39, 40).

5. The Christian doctrine of an opponent of God (devil, Satan or Antichrist) is derived from a misunderstanding of the allegorical narratives about a certain holy war mentioned by Heraclitus and others and from the Egyptian mysteries of Tryphon, and Horus, and Osiris (VI, 42-46).

According to Celsus the most godless errors of the Christians proceed in general from their inability to understand the divine mysteries. Under this category he reckons more particularly the Christian doctrine of Satan, the adversary of God. Even the ancients, Pherecydes, Heraclitus and others, spoke enigmatically of a war of the gods. The Christians perverted this and made out of it their doctrine

of Satan. "The Son of God," says Celsus, "is overcome by Satan, and warns the Christians of the Satan yet to come who will accomplish great and wonderful things, and arrogate to himself the honor of God, telling them that they are not to be shaken in their faith when he appears. All this shows simply that this Satan is a sorcerer or deceiver like Jesus himself, and naturally enough is afraid of the latter as his rival" (VI, 42).

6. The Christian doctrine of the creation of the world is foolish and full of contradictions (VI, 47-65).

The reason, Celsus goes on, why the Christians speak of a son of God, is that the ancients called the world a child of God because it derives its existence from God (VI, 47). This leads him to speak of the world and the creation of the world, and of the Mosaic history of creation (VI, 49). In criticising this history he contrasts with the gross anthropomorphisms which he finds in it his Platonic doctrine of God. The Mosaic cosmogony he thinks extremely silly. The distribution of the creation of the world over certain days, before days existed, is the most silly of all; for as the heaven was not yet created, nor the foundation of the earth yet laid, nor the sun yet revolving, how could there be days? (VI, 60, 50). They also think that the words, "Let there be light," were only the expression of a wish. For "the Creator did not borrow light from above, like those persons who kindle their lamps at those of their neighbors. And if, indeed, there did exist an accursed god opposed to the great God, who did this contrary to his approval, why did he lend him the light?" (VI, 51). "Moreover (taking and looking at these things from the beginning) would it not be absurd in the first and greatest God to issue the command, Let this come into existence, and this second thing, and this; and after accomplishing so much on the first day, to do so much more again on the second, and third, and fourth, and fifth, and sixth (VI, 60);

and after this, indeed, to be weary, like a very bad workman, who stands in need of rest to refresh himself? But it is not consistent with the fitness of things that the first God should feel fatigue, or work with his hands, or give forth commands" (VI, 61). God, the cause of all existence, is without color, form, or motion, and exalted above every word and conception (VI, 65).

7. The Christian doctrine of God's manifestation upon earth is already found among the Stoics and is untenable on account of its intrinsic contradictions (VI, 66-81). Such being the case one might ask, "How, then, shall I know God? and how shall I learn the way that leads to him? And how will you show him to me? (VI, 66). How think ye to know God and how shall ye be saved by him? (V, 68). To this, Celsus says, the Christians may argue that just because God is so great and it is so hard to know him, he implanted his spirit in a body like our own, and sent him to us that we might hear him and learn from him (VI, 69). This, however, only provides Celsus with an opportunity which he is not slow to use, to cover with derision so sensuous a representation. He not only points out that to call God a spirit is not only peculiar to the Stoics (VI, 71), but he asks: If God wanted to send his spirit out from himself, why did he find it necessary to breathe it into the body of a woman? He knew how to make men, and could surely have formed a body for his spirit without casting it into such filth. If he had appeared in this way coming down suddenly from above, no unbelief would have been possible (VI, 73, 74). But if the divine spirit was to be in a body, he ought to have surpassed all others in greatness, beauty and the imposing effect of his whole presence. As it was, he was entirely undistinguished; in fact he was small and ugly (VI, 75). If God, like Zeus in the comedy, awoke from a long sleep and formed a desire to deliver the human race from its evils, why did he send what the Chris-

tians call his spirit into a corner? He ought to have animated many such bodies and sent them into the whole world. The comedy-writer, in order to excite laughter in the theater, made Zeus send Hermes to the Athenians and Lacedaemonians when he woke from his sleep; but it is much more ridiculous that God should send his son to the Jews (VI, 78). And was not God, knowing all things, aware of this, that he was sending his son amongst wicked men who were to be guilty of sin, and to inflict punishment upon him? But, adds Celsus, they (the Christians) say, that all these things were predicted (VI, 81).

8. The Jewish-Christian predictions are no better than the oracles, besides being false, because in them ugly and impossible things are attributed to God (VII, 2-18).

Celsus objects that the Christians set no value on the oracles of the Pythian priestess, of the priests of Dodona, etc., but those things which were uttered or not uttered in Judea, after the manner of that country, as indeed they are still delivered among the people of Phœnicia and Palestine, these they look upon as marvelous sayings and unchangeably true (VII, 3). Celsus then goes on to speak of the kind of prophecies given forth by so-called prophets, who utter dark sayings that have no meaning at all but "give occasion to every fool or imposter to apply them to suit his own purposes" (VII, 9). He adds that "those prophets whom he had heard, when urged by him, confessed their true motives, and acknowledged that the ambiguous words they used really meant nothing at all" (VII, 11). Even those who support the cause of Christ by a reference to the writings of the prophets can give no proper answer in regard to statements in them which attribute to God that which is wicked, shameful, or impure (VII, 11, 12). For how much better was it for God to eat the flesh of sheep, or drink vinegar and gall, than to feed on filth? (VII, 13). If the prophets foretold that the great God—not to put it

more harshly—would become a slave, or become sick, or die, would there be therefore any necessity that God should die, or suffer sickness, or become a slave, simply because such things have been foretold? Must he die in order to prove his divinity?

But the prophets never would utter predictions so wicked and impious.

We need not therefore inquire whether a thing has been predicted or not, but whether the thing is honorable in itself, and worthy of God. We must not believe that which is evil and base, even though it seemed that all men in the world had foretold it in a fit of madness. How then can the pious mind admit that those things which are said to have happened, could have happened to one who is God? (VII, 14). If these things were predicted of the Most High God, are we bound to believe them of God simply because they were predicted? (VII, 15). "If the divine prophets of the Jews prophesied of Jesus as the Son of God, how can God, speaking through Moses, give the command to accumulate riches, to rule, to replenish the earth, to put enemies to death, to extirpate whole populations, as God himself did under the eyes of the Jews, while his Son, the Nazarene, gives commands exactly opposite to these; closes the access to the Father against the rich, the ambitious and those who are striving after wisdom and honor; bids men care for food less than the ravens, for clothing less than the lilies, and requires that a man should turn the other cheek to the smiter? Who is lying then, Moses or Jesus? Or had the Father, when he sent Jesus, forgotten the command which he had given through Moses, or had he repented of his own laws, and did he send another messenger with contrary directions? (VII, 18).

9. The eschatological doctrines of the Christians can easily be refuted, because

a. God has no human-like body, can therefore not be

seen perceptibly by the pious after death (VII, 27-34);

b. the Christian notion of a better earth is misunderstanding the Platonic doctrine of the pure earth, (VII, 28-31);

c. the Christian doctrine of the resurrection rests upon misunderstanding the philosophical doctrine of metempsychosis (VII, 32).

According to Celsus, the Christians say that God is corporeal in his nature and possesses a body like a man, statements which can easily be refuted (VII, 27).....But if they be asked, "Where do you hope to go after death?" they answer: "to another land better than this" (VII, 28), a statement which, he says, the Christians borrowed from certain ancient writers whom he styles "divine," and chiefly from Plato who in Phædo discourses on the pure land lying in a pure heaven. And as they misunderstood this, they also misunderstand the doctrine of metempsychosis, which they turned into a doctrine of the resurrection (VII, 32).. And after they are utterly refuted, they still, as if regardless of all objections, come back again to the same question: "How then shall we see and know God? how shall we go to him?" (VII, 33). They expect to see God with their bodily eyes, to hear him with their ears, and to touch him sensibly with their hands (VII, 34).

10. When the Christians excuse the suffering and dying of Jesus with the precept that one must patiently bear the wrong, this precept, too, is derived from Plato's Crito (VII, 36-58).

Celsus continues, saying it is not the man that asks this (viz., how can we know God unless by the perception of the senses), not the soul but only the flesh. If the cowardly body-loving generation will hear anything, it is necessary to say to it that on these terms only will they see God, that they close their senses and look up with their spirit,

that they turn away from the eye of the flesh and open that of the soul. And if they want a leader for this way they should eschew sorcerers and deceivers and those who recommend idols. If they do not do this, they make themselves in every way ridiculous. On the one hand, they blaspheme the approved gods as idols; on the other hand, they worship a god who is in fact more miserable than the very idols—not even an idol, but a dead man, and seek for a father like him (VII, 36). Celsus holds up to them the Platonic dictum that it is hard to find the Creator and Father of the universe, and when one has found him, impossible to express him for all. This is the true path on which divine men seek the truth; a path indeed on which the Christians, altogether entangled in the flesh and seeing nothing pure, cannot follow (VII, 42). If they believe that a spirit has come down from God to proclaim the truth, this can be none other than that spirit who reveals those things with which men of the olden time were filled. If they cannot understand these things they should hold their peace and conceal their ignorance, and not call blind those who see, lame those who walk, when they themselves are quite lame and crippled in soul, and live only with their dead body (VII, 45). If from their love of innovation they must have some one to adhere to, they should have chosen one who died a noble death, and was worthy of a divine *mythos*. If Heracles or Asklepios did not please them they might have had Orpheus, who also died a violent death, or Anaxarchus, or Epictetus, of whom sayings were reported such as to fit them for the position. Instead of this they make a god out of one who closed the most infamous life with the most shameful death. Jonah in the belly of the whale,[43] or Daniel in the den of lions[44] would have served better (VII, 53).

[43] Jonah ii. 1, 11.

[44] Daniel vi. 16 ff.

They have also, says Celsus, "a precept to this effect, that we ought not to avenge ourselves on one who injures us, or, as he expresses it, 'Whosoever shall strike thee on the one cheek, turn to him the other also.'" This, Celsus says, is an ancient saying, which had been admirably expressed long before, and which they have only reported in a coarser way (VII, 58).

PART IV.

Books VII, 62—VIII, 71.

Celsus Defends the Religion of the State.

A. The Christians have no right to reject the heathen cult (VII, 62—VIII, 49), because

1. they would only follow the example of the Scythians, Libyans, Seres and Persians (VII, 62);
2. Christians should not abhor the images of the gods, since they claim to have been created by God after his own image (VII, 62, 66, 67);
3. the demons ought to be worshiped,
   a. because they have their authority from the supreme God (VII, 68);
   b. because in worshiping the demons they honor the supreme God (VII, 68—VIII, 2);
   c. because it is impious to assume an opposition between God and demons hostile to him (VIII, 11);
4. The Christians have so much the less cause to reject the worship of demons, the more extravagantly they worship God's Son, beside him, yea, above him (VIII, 12-16);
5. The Christians have no excuse for keeping aloof from the sacrificial feasts, for nowhere can they withdraw from contact with the demons (VIII, 17-37);
6. The power of the heathen gods has sufficiently

proved itself in the persecutions of the Christians, in prophecies, cures, in public and in private (VIII, 38-48).

B. To the philosophically cultured Christians, with whom Celsus hopes to come to an understanding on a common basis, he emphasizes (VIII, 49),

1. that the demons should be worshiped in order not to be ungrateful and unjust towards them (VIII, 53-58);
2. that moderation in the worship of demons ought to be observed, and never and nowhere should the worship of the supreme God be neglected (VIII, 60-63);
3. that the worship of Cæsar must not be neglected, because
   a. the rulers have their positions through the instrumentality of the demons,
   b. their behest must be executed in order to avoid punishment;
   c. Christians should not trust in their God, who prevented neither the expulsion of the Jews from Palestine nor the persecution of the Christians (VIII, 63-71).

"It is hard to understand," says Baur, "the reason for such deadly hatred against the Christians in an opponent to whom it ought to have been an easy matter to concede to Christianity a divine origin, if not in the Christian sense, yet in the sense of the pagan doctrine of demons. And so we cannot think it fortuitous that at the close of his work Celsus takes up the doctrine of demons for special discussion."

The transition to the subject is made in this way. Celsus could not leave unreproved the antipathy of the Christians to temples, altars, and images. The Christians, he says, simply reject images of the gods. If their reason

for this is that an image of stone, wood, brass, or gold cannot be a god, this is a ridiculous wisdom; none but a fool holds them to be anything more than mere votive offerings and images. But if they think that there should be no images of the gods, because the gods have another form, the Christians should be the last to say this, for they believe that God made man after his own image, and that man is like him. Their reason then must be that they hold those to whom the images are dedicated to be, not gods, but demons, and are of opinion that a worshiper of God is not at liberty to serve demons. It is clear that they worship neither a god nor a demon, but a dead man (VII, 68).

But why should demons not be worshiped? Does not everything proceed from divine providence? Does not everything that is done, whether by a god, or by angels, or by other demons, or by heroes, derive its law from the supreme God? Is not each one placed over that of which the power has been given to him? Thus, according to the assertion of the Christians, he who worships God does not do right in worshiping one who has received his power from God, for it is not possible, as they say, to serve more masters than one (VII, 68). This assertion, however, can only be maintained by those who make a principle of sedition and discord, and who separate and break themselves away from the rest of mankind. He who speaks thus imputes to God his own affections. With men it might very naturally be the case that if the servant of one served another as well, the former might feel his rights encroached on. But nothing of the sort can be the case with God, and he who worships a number of gods honors the supreme God by honoring those who belong to him (VIII, 2, 9).

It is impious to speak of God as the one Lord. This presupposes that there is an adversary, and can only bring division and disunion into the kingdom of God (VIII, 11).

The Christians might maintain their proposition if they worshiped no other but the one God, but they pay extravagant honor to one who appeared only lately, and they think that, notwithstanding the worship they pay to his servant, they do not come short of their duty to God (VIII, 12). The very fact that the Christians worship God's son as well as God amounts in itself to a concession that not only the one God is a proper object of worship, but his servants as well (VIII, 13). So eager are they for the worship of the founder of their sect, and of him alone, that even if it were proved to them that he was not the son of God, they would not worship the true God, the Father of all, without him (VIII, 14).

That the Christians, if they believed that the demons were not gods, should refrain from taking part in public worship, in sacrifices and sacrificial feasts, was very natural, and what Celsus says against them on this head has no further significance. But all the more striking is his claim that he has reduced the Christians to the dilemma, that either they must worship the demons, or, giving up the worship of the demons, must renounce all further claim to live. "If the Christians shrink from feasting with the demons, one can only wonder how they do not know that on these terms also they are table-companions with the demons, even though there is no slaughtered victim before them. The grain that they eat, the wine that they drink, the fruits they partake of, even water and the air they breathe, all these things do they receive from the particular demons to whom, each in his province, the care of every single thing is committed (VIII, 28). Either, then, a man must not live at all, and cease to tread this earth, or, if one goes into this life, one must be thankful to the demons who are appointed as overseers over the earth, and bring them first-fruits and prayers as long as one lives, that they may continue to be kind to men" (VIII. 33).

Again and again does Celsus set before the Christians the two alternatives: the first, "that, if they refuse to pay to the guardians of all the honor that is due to them, then they should not live the life of men, should not marry wives nor beget children, nor do any of the other things customary in this life, but go away altogether without leaving seed behind them, in order that such a race may die quite out of the world"; the second, "that if they marry wives, beget children, enjoy the fruits of the earth, take their share of what life affords, and put up also with the evils that are laid upon them (for nature itself so arranges it that all men have evils to endure; there must be evils as well as good things), then they should also pay to the overseers who are in charge of these things the honor that is due them, and fulfil the common duties of life until they are released from their bonds, so as not to appear unthankful towards them. For it is unfair to enjoy what belongs to those powers, without paying them some tribute for it" (VIII, 55).[45]

Very striking is the following remark by Baur: "To thus narrow a point is the polemic between Christianity and paganism here reduced. If only the Christians could have made up their minds to call their angels demons, and to consider them in that light, this would at once have removed one great cause of offence to the heathens who would then have been much more inclined to make admission to Christianity in particulars which the existence of this point of variance made them still contest. But how could Christianity ever make this one concession without renouncing itself? Had the Christians worshiped those same

[45] To this charge of ingratitude Origen replies: "We, while recognizing the duty of thankfulness, maintain that we show no ingratitude by refusing to give thanks to beings who do us no good, but who rather set themselves against us when we neither sacrifice to them nor worship them....Moreover, as we know that it is not demons, but angels, who have been set over the fruits of the earth, and over the birth of animals, it is the latter that we praise and bless, as having been appointed by God over the things needful for our race; yet even to them we will not give the honor which is due to God" (VIII, 57).

beings, whom they called angels, as demons in the sense of the heathens, they would have been assenting to heathen polytheism, and taking up a position identifying themselves with the attitude peculiar to the heathen world. The opposition of the Christians to the heathen doctrine of demons is thus simply the point where the profound intrinsic antithesis in which Christianity stands towards heathens becomes most strikingly apparent. Their denial of the heathen doctrine of demons was to the Christians the renunciation of the whole heathen world-conception, or of that way of thinking which does away with the absolute notion of the divine wherever it prevails, because it does not uphold a strict enough distinction between the divine and the natural, but lets them flow together in one and the same conception thus becoming indistinguishable. Thus, slight as the difference might appear to be between the angels of the Christians and the demons of the heathens, yet the antithesis which underlies it is as deep as possible.

"It is noteworthy that where he deals with the doctrine of demons, Celsus plays the part not so much of the assailant of Christianity as of the apologist of heathenism, as if he felt it to be of the utmost importance to convince the Christians here at least of the truth of the heathen religion. He cannot urge upon them too earnestly that by denying the heathen doctrine of demons, they deny their inmost consciousness of God, violate the most sacred duties, and show themselves to be men who do not deserve to live in the world at all. Must not the denial of the heathen doctrine of demons have appeared to Celsus to amount ultimately to an open declaration of war against all that the whole heathen world counted as faith, and as holy usage handed down from the most ancient times?" (p. 162 f.)

CLOSING WORD.

VIII, 72-75.

Although Celsus thinks it impossible "that all the inhabitants of Asia, Europe and Libya, Greeks and barbarians, all to the uttermost ends of the earth" can be united into *one* form of worship of God, yet he hopes

1. for an agreement with cultured Christians,
2. for their participation in the affairs of the state, especially in times of need; to hold office in the government of the country if that is required for the maintenance of the laws and the support of religion.

Origen closes his refutation with the remark that "Celsus had promised another treatise as a sequel to this one, in which he engaged to supply practical rules of living to those who felt disposed to embrace his opinion." But it seems that he never carried out his plan.

We may close this review with a remark of Baur: "This more than anything else is characteristic of the attack which Celsus made on Christianity, that, refusing to recognize in it anything great and fitted to awaken reverence, he made Jesus himself a deceiver, and was unable, as it appears, to account in any other way for Christianity than that it owed all its growth and its successes simply to fraud and deception. Yet we can scarcely fail to see that the deep contempt with which Celsus looks down upon Christianity and the bitter mockery with which he overwhelms it in such abundant measure, are in fact feigned, and not the true expression of the writer's mind. Can there be any greater testimony to the importance which Christianity had by this time obtained in the eyes of the public of thinking men, than just the fact that a man like Celsus, undoubtedly one of the most cultivated and enlightened, the best informed and most competent to judge, of those living in that age, thought the new phenomenon of such importance as to make it the

subject of a most careful and elaborate investigation? However much he found in it that was objectionable and worthless, absurd and meaningless, sensuous and materialistic; though he could not attribute any distinctive value to it as a whole, either from a philosophical or religious point of view; yet, to combat it successfully he felt himself compelled to resort to every means that Greek philosophy offered and to take up in opposition to it no less lofty a position than that of a Platonic philosopher. And if the main point of the controversy came to this, that the Christians refused to worship the demons, and would hear nothing of the popular mythical religion, how could he put so much earnestness into the accusation which he brought against them, when to himself, with his philosophical views, belief in the old gods could not possibly be anything more than a tradition which had become more or less detached from his consciousness? In spite of this, it is a fact that his standpoint prevented him from seeing in Christianity anything but a work of deception. Still it is something that by this time it had come to be held for nothing worse; and we may take it as a proof of the great importance which attached to it in the mind of the age that people should think there was no explanation but that of imputing a deception, a phenomenon which appeared the more enigmatical, the greater its influence was. What is this but saying that it had come to be a power in the world by a secret and mysterious path no further explanation of which could be given?" (p. 166.)

"Celsus," says Uhlhorn, "has evidently a suspicion that he is the champion of a lost cause. This whole book is indeed a prediction of victory for Christianity. Thus we can understand how Celsus, with all his bitter hatred of Christianity, yet finally proposed a kind of compromise to the Christians. They were to have toleration, even freedom to serve the one supreme God, if they would also

worship the demons, the subordinate gods which are set over particular departments in this world, and if they would make up their minds to honor the emperor and to help him in this time of difficulty by participating in the efforts and burdens of the Roman Empire. Celsus took great pains to render this compromise acceptable to the Christians. He set himself to work to bring philosophy and the Christian faith nearer together. It was not much that he asked. They might remain Christians in all else, worship the supreme God as before, if they would only also pay to the demons the honors which were their due. It was not as if they were required to do anything disgraceful. What impiety could there be in singing a beautiful hymn to Athene? In her they would really be worshiping the supreme God. Or what impiety was there in swearing by the genius of the Emperor? Had not God given him his power? Did he not issue his commands by God's permission and under his authority? But in case the Christians should resist these advances, Celsus threatened them with violence—they were to be utterly exterminated. The Christians might take their choice: Peace or war.

"To the Christians there was of course no choice. They could not accept the compromise. The worship of the supreme God excluded the worship of the demons, and Christianity must be more than a religion tolerated side by side with others. The deification of the powers of nature and of the emperor would have made Christianity into a new heathenism. Yet the Christians would one day share the efforts and burdens of the empire; yea, they were one day to become its strongest support. A time was to come, when the old and tottering empire would seek and find in the youthful strength of Christianity the basis of a new life. But that time was yet distant. For the present the Christians could do nothing but suffer" (*loc. cit.*, p. 305 f.).

Keim comments as follows upon the view of Christian-

ity presented by Celsus: "The Jesus from the pen of Celsus requires no contradiction, however terrible the weapons of the author's critical acumen, led on as it is by his heathen animosity to the person of Jesus and further to the whole of Christianity. It is only necessary to observe that he has contradicted himself, 'slain with his own weapons,' since he ascribes to Jesus the most beautiful sayings in his sermon on the mount, and at the same time expressly declares that heathen philosophy has already said it all before, only with greater beauty and accuracy, and that Christianity reveals itself as a misunderstood and maimed philosophy. It is therefore a philosophy, and not merely a deceit—in truth, *the* philosophy with which he may come to terms in the midst of the fearful persecution and from which he may only desire some concessions to heathenism. And here is a marvel. Celsus perceives that Christianity cannot and will not give way, but cannot Celsus give way? When he himself says that the supreme God whom the Christians worship must never be forsaken, when with the philosophers he deprecates the worship of sensual demons, that is of the gods—which stands nearest to conversion, the weak reed of the wisdom of this world, or the might of Christianity?[46] "Should the supreme God give way to the demons, or the demons to the supreme God? Should the power of the demons protect Rome or the power of the law of the universe? Thus Rome became Christian and through the power of the God of the Christians Constantine conquered."[47]

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[46] *The History of Jesus of Nazara*, Vol. I, pp. 38 ff.

[47] *Celsus' Wahres Wort*, p. 253.

ON THE ABUSES OF THE NOTION OF THE UNCONSCIOUS.*

IN former centuries philosophy was primarily inspired by mathematics and the natural sciences. To-day it takes its inspiration from psychology, and this changed point of view has led to a singular diminution in the part played by reason which was formerly declared all-powerful.

In the eyes of most modern psychologists reason, once so exalted, becomes nothing more than a flimsy pattern thrown upon the living substance which instinct has woven; or rather, the conscious self with which we relate it almost vanishes by the light of pathology or resolves itself into an unconscious activity which plays such an important part even in normal life.

In fact we have here two subjects, instinct and the unconscious, which remain distinct, however allied they may be. We shall still have to distinguish both of them, in so far as they are psychological subjects, from the philosophical doctrines in which they find their completion; and first of all we must discuss the value of their application to all the sciences of man, both theoretically and practically.

The psychological subject of instinct as far as man is concerned applies to those profound depths of our nature designated indifferently by the vague words tendencies, appetites, desires or elementary feelings. The unconscious

*Translated from the French by Lydia G. Robinson.

is concerned rather with the hidden organization of our mental life, the entire portion of that life which actually escapes our view and which like instinct seems anterior and, so to speak, exterior to our voluntary and reflective activity which nevertheless contributes to give it form.

For the same reason it is possible that the phenomena we call unconscious may furnish us with the secret of instinct which seems to fill so wide a field. But this is not the point we are to consider. What interests us at present is to observe the different range of these two subjects according to the regulations by which they are adjusted and the deductions to be drawn from them.

In the theory[1] that the subconscious, or the unconscious, plays an essential part in our life; that every psychical phenomenon requires at the same time both a perceiving subject and a perceived object; that it would therefore be vain to speak of a subject, of an ego that is purely psychical; and that therefore no "pure thought" could exist, I have nothing to criticize nor do I avoid accepting it. The fact practically remains that "thought" is a peculiar aspect of the "phenomenon," that it is a real fact, a fact of primary importance, and that we can not eliminate it from our investigations without running the risk of perverting them entirely.

* * *

This however, according to Michel Bréal,[2] one of our principal leaders, is the error of those linguists who under the standard of the unconscious have carried the idea of fatality into the study of linguistic phenomena. He never ceases protesting against a theory which seems to him to put philology on a wrong basis. Yet, contrary to the views of the opposing school, there is at least a half-conscious intention, a secret and yet attentive intelligence, presiding

[1] Recently formulated by G. L. Duprat in the *Revue philosophique*, Sept. 1910.

[2] *Essai de sémantique* (Paris, Hachette).

over the formation of languages. This is shown in the creation of the passive form, of the adverb, of nouns, which the people have created, he says, "as the scholar creates his own language." Even phonetics seems to him to be subject to this supposed fatality which is declared to be the law of language but which he thinks is everywhere disappearing. Here again, he writes, it is the brain as well as the larynx which is the cause of the changes. "Thought is present everywhere."

From another point of view Victor Henry[3] writes that even if language is a conscious fact, the "processes" of language are unconscious. But might there not be degrees of distinction between the voluntary, deliberate act, and the purely instinctive or accidental one? Would not individual invention, however understood, have some part here? The simple imitative repetition of a word, of a phrase, such as we may hear at every step from children in the streets, absolutely and in every case declares a choice, an individual fancy. Even to-day we may still observe the invention of metaphors, images which "produced in some well-constructed head are common property as soon as they are spread abroad." And new compound and abbreviated words are constantly coined "when the originality of each nation has free play."

Some say that language has no liberty because I am not free to change the meaning of the words. Michel Bréal replies that this particular limitation of liberty must be correctly understood; that it is the same in kind as that possessed by the laws which regulate our social life.

To speak here of natural law only creates confusion. It would be more correct to speak of "intellectual laws."

* * *

If the part of individual initiative is to be retained, however weakly, in the formation of matter (to which the

[3] *Antinomies linguistiques* (Paris, Alcan).

term "collective creation" would better apply) it is much more reasonable that it should exist in the personal inventions of the human race in all the forms in which it is manifested. An eminent geometrician, Henri Poincaré, has pleaded that we should leave some part, in mathematical invention at least, to reason, to the self-conscious intellect. Here too I have supported his contention.[4] With him I have shown that every sudden illumination of the mind, though it may seem unconscious, is nevertheless prepared, supported and surrounded by an act of will.

I shall not repeat what I have said before but shall add just one word on inspiration, or rather on the circumstances of inspiration in art.

"It seems to me," a woman of the world said one day to Reyer, "when I read a certain page of your 'Sigurd' that I see you seated on the shore of the sea gazing into the blue depths of the waves...." "That page?" interrupted the author, " it came to me while seated on top of an omnibus smoking my pipe."

There are many instances of this kind which might be cited. They certainly testify against the idea of blind inspiration rather than support it. If genius came only unconsciously the nerves of the musician would doubtless respond to the direct stimulation of the picture which he sees or the experience he has lived. They would be like the chord of a harp vibrating at a breath of wind. But this is not the case. A strain comes to the musician because he is expecting it, if not because he has prepared it in advance. And for this reason it comes to him at any moment whatever, sometimes even when he is performing the most ordinary action of everyday life.

"I can not draw the moon," wrote Berlioz to Wagner, "except when I am looking at its reflection in the bottom of a well." By this he meant that an act of thought must

[4] *The Monist*, Oct. 1910.

always intervene between the emotion of the scene and its reproduction in art.

Whoever has produced any work great or little, whether a musician, painter or poet, cannot but observe that his successful inspirations which come as if by chance are particularly frequent during the execution of the work and relate almost entirely to details. Again they are often the result of a fertile enthusiasm and become grafted upon the dominant deliberate conception.

The rôle played by the unconscious remains on the whole a very important one, but it is not well to let it blind our eyes to the value of voluntary effort, nor should the study of the secret nervous currents by which our brain is nourished and consumed prevent us from seeing the point of the machine at which the spark is going to flash.

It is said that we find only what we are looking for. This is no less true of the artist in composing an original work than of the scientist in making experiments.

I willingly grant that every sort of introspection is dangerous. Nevertheless let us be sincere. The direct bearing of physiology on the delicate problems of psychology is much too slight to render so soon useless the observation most prudent in itself and every recourse to simple argument.

Will the psychology of the unconscious therefore be more easy and more advanced than that of the conscious? On the other hand we have no better evidence of the collective entity than of the individual unity.

* * *

Indeed I can not separate these two questions of the unconscious and the individual, and I find them again in a hardly different form in our "philosophies of history."

The opposite sides taken by the theorists may be reduced in my opinion to a question of perspective. Viewed in large outlines history appears to be subject to chance

or fate. Considered in details it shows the design and intelligent will of man. The consideration of the masses may lead equally either to eliminate the element of chance or to exaggerate the part played by accident. It is a different matter when we examine at close range a definite succession of historical events. But revolutions depend on the conjunction of several series of facts whose progress exceeds the short term of one human life, and the intelligence of men may prove powerlesss to govern them with security at the time, though this does not prevent its operation to a notable degree.

As in the case of the individual each nation finds itself involved in a long succession of events, and it has direct control over only one part of the events which make up the series. Here its power is real, but the efficacy of this power is in proportion to the range of its foresight and its actions. From this I would infer in passing that the best kind of government is that which with a wide comprehension of social changes assures as far as possible to a people the continuity of its political action.

But we will leave these considerations which are aside from our subject and will point out an error in sociological theory which seems to me to have attracted one of our most distinguished writers on art, Charles Lalo, of whom I have had previous occasion to speak to our readers.[5]

According to Durkheim[6] the two essential characteristics of the social fact are that it exists outside of individuals and that it is obligatory. "A social fact," he writes, "may be recognized by the power of external compulsion which it exerts or is capable of exerting on individuals." I shall not discuss this theory. However solid it may be, and if it met with no objections, its application in my opinion would not be extended without reservation to all social

[5] *The Monist*, October, 1910.

[6] *Règles de la méthode sociologique* (Paris, Alcan).

phenomena and especially to esthetic phenomena of which I wish solely to speak at present.

Referring to this definition of the social fact as "constraint," Lalo[1] in his turn was led to define the value of art as dependent upon the approval of our peers, to reduce esthetic pleasure to "a very special delight born of satisfaction in technical requirements as determined and organized by society," and therefore to subordinate in this way the original activity of the artist to the taste of the community—by which the evolution of art, it seems to me, would not be easily explained.

In the system of Lalo, it is true, this evolution is to be brought about by way of an "internal dialectic," that is to say, a necessary development of technique by virtue of the principles on which it is based and under the influence of material inventions capable of rejuvenating it. Still it is doubtful whether this dialectic would have for its indispensable agents individuals, the innovators of genius; and it seems to me that changes in art whether in music or the plastic arts depend in the first place on the creations of the masters, the models offered by them which finally become the rule of a school.

The work of art which I have created possesses a value to me before it is recognized by the public. This may be, if you please, the value of the gold coin or silver before the state has stamped upon it the imprint which makes it a piece of money.

There is always a conflict and at the same time an exchange between the individual and society; the collective action of the community resolves itself into particular actions. Almost the same thing occurs here of which we have spoken with regard to language. Just as the individual does not have the power to change the meaning of

[1] I have studied his theory at length in an article in the *Revue philosophique*, October, 1909, under the title of "Esthetics and Sociology."

words because then he would no longer be comprehended, —which has not prevented strange innovations of the so-called symbolist poets—so the activity of the musician or painter is subject to certain conditions which serve as limitations for him. But still the boundary remains wide enough for his fancy as the many *salons* of our large cities testify.

What we call the taste of the community is constantly changing. Society is not a homogeneous mass; it usually consists of many groups more or less restricted and defined so that there is a tendency towards what the life of art collects by individual efforts which finally radiate in all directions whence this double movement of depression and elevation, if I may call it so, of the esthetic wave which causes now the individual aspect and now the general or popular aspect of artistic production to appear.

The interesting observation has been made that languages belonging to large populations become changed less quickly than dialects. It is the nature of the latter to subdivide more and more as in mountainous countries, because the proportion of individual strength compared to the strength of the community is greater in small districts. For the same reason schools of art have likewise been more diverse in countries divided up as Italy was. The social scale effectively reduces the originality of the individual externally by means of the conditions that it imposes upon him, at the same time reducing it internally as well by organizing its unconscious activity against him, so to speak. It is in this way that the sociological doctrine of constraint follows or confirms the psychological doctrine of the unconscious, and that the excesses of the one at the same time call forth the excesses of the other.

* * *

At first glance we would seem to have here a contradiction between these theories and the individualistic tenden-

cies so criticized to-day. Nevertheless the theories like these tendencies are closely connected with one another. Men are inclined to humiliate reason in favor of instinct, to subordinate clear intelligence to some sort of obscure intelligence, and at the same time it is this obscure intelligence, this mysterious will of the instinct which would justify the revolts of the individual against the objectionable yoke of social laws.

Since our instincts know much more than our reason it only remains to follow them and the impulse of our appetites will lead us more surely than reason ever could.

What for instance do we find at the bottom of the modern "feminist" movement if not the rebellion of desires against the requirements of domestic duties? Our theaters are exhibiting a new ethics of love; may it not be a return to the immodesty of former times?

Certainly there is no lack of direct causes to account for this impulse of individualism with its extreme consequences, the dissolution of morals, the ruin of the family, the relaxation of all social bonds. We might refer to the rapid changes in economical and material conditions of modern life, but it is curious to note the sort of parallel progress which makes our most popular philosophies act in the same way as these external conditions simply by virtue of their principles from which they themselves do not directly draw the application.

Under whatever name we classify these philosophies they clearly proclaim themselves anti-intellectualists and, if I may be allowed the word, instinctivists. The unconscious and instinct are closely connected, because of the character common to both of restraining the power or reason and consequently of restricting the ground of practical liberty. Thus the way opens to a new fatalism, a fatalism "from within" which popular logic is no less able accurately

THE IDEAL AND LIFE.

BY FRIEDRICH SCHILLER.

SMOOTH, and ever clear, and crystal-bright,
Flows existence zephyr-light,
In Olympus where the blest recline.
Moons revolve and ages pass away,
But unchanged, 'mid ever-rife decay,
Bloom the roses of their youth divine.
Man has but a sad choice left him now,
Sensual joy and soul-repose between;
But upon the great Celestial's brow
Wedded is their splendor seen.

Wouldst thou here be like a deity,
In the realm of death be free;
Never seek to pluck its garden's fruit!
On its beauty thou may'st feed thine eye;
Soon the impulse of desire will fly
And enjoyment's transient bliss pollute.
E'en the Styx that nine times flows around
Ceres' child's return could not delay;
But she grasped the apple—and was bound
Evermore by Orcus' sway.

Fate's dark power our bodies claims alone
Nor ought else can ever own.
Form is never bound by time's design.
She the gods' companion, blest and bright

Liveth in eternal realms of light
'Mongst the deities, herself divine.
Wouldst thou on her pinions soar on high,
Throw away the earthly and its woe!
To the ideal realm for refuge fly
From this narrow life below.

Ever young, crowned with Perfection's ray
Free from any taint of clay,
Man's eternal archetype lives here.
So life's silent phantoms brightly gleam
While they wander near the Stygian stream.
And in heaven e'en she did thus appear,
The Immortal one, ere she descended
Down to the Sarcophagus so drear.
While in life the conflict's never ended,
Victory for aye is here.

Not to free us from the stress of life,
But to strengthen for new strife,
Are here offered wreaths of victory.
Though we fain would rest, yet stern and strong,
Ruthlessly life carries us along
On the whirlpool of time's restless sea.
But when courage flags and when our soul
Feels the limits of its senses dull,
From the hill tops of the Beautiful
We behold the longed-for goal.

Life demands to govern and defend;
Wrestlers bravely must contend
On the path of fortune or renown.
Boldness clashes daringly with force,
And the rolling chariots thunder down
To the goal in dust-beclouded course.

Valor only gains the prizes great
In the races of the hippodrome.
T'is the strong alone who conquer Fate
While the weak are overcome.

Yet life's stream while rocks its course enclose
Wildly foams 'gainst crags; it flows
Gentle and meanders sinuous,
Where its way through beauty's realm it wendeth.
In its silver mirror its wave blendeth
Both Aurora and blithe Hesperus.
Warring passions here have respite found.
Reconciled by art they now appear
Gracefully in mutual union bound
And no enemy is near.

If with ardor genius createth,
Soul with lifeless marble mateth,
To dead stuff through beauteous form gives worth;
Then let energy strain every nerve
'Till the brutal elements will serve
And the artist's noble thought bring forth.
Only he who seeks with toilsome glow
Hears the murmuring spring of hidden truth;
Only to the valiant chisel's blow
Yields the marble block uncouth.

When we enter into beauty's spheres
Dead inertia disappears;
Of the dust it is and dust it sways
But the statue as from nothing sprung
From dead mass seems without labor wrung.
There it stands before the ravished gaze,
Quelled are struggles and all doubts allayed
At the mastery thus nobly won;

And whatever might have still betrayed
Human frailty, now 'tis gone.

When in helpless nakedness man faces
Law's keen search, his pride abases;
Guilt e'en to the Holiest draws nigh.
Stoutest virtue quails before truth's ray;
The ideal unattained and high
Leaves behind deeds of our noblest day.
Mortals all their final goal will miss
For no ferry neither bridge will bear
Over this deep sundering abyss,
And no anchor catches there.

But by fleeing from the sense-confined
To the freedom of the mind
The dread specter of our fear hath flown.
Then the deep abyss at once will fill;
When we God receive into our will,
He descendeth from his lordly throne.
Servile minds alone who scorn law's sway
Need the castigation of its rod,
And with man's resistance dies away
E'en the sovereignty of God.

If by misery your soul is grasped
Like Laocoon enclasped
In the dreadful coil of vicious snakes,
Then 'tis right to show your indignation;
To the welkin ring man's lamentation
Till a tender heart for pity breaks.
Let the voice of nature's awe prevail,
Hush loud joy and let her face grow pale;
The immortal soul subdued will be
Thus by holy sympathy.

But in yonder regions of pure form
Realms serene, e'er free from storm,
Misery and sorrow cease to rave.
There our sufferings no more pierce the soul,
Tears of anguish there no longer roll,
Nought remains but mind's resistance brave.
Painted on the canvas of the cloud,
Beauteous as the rainbow's colored hue,
E'en on melancholy's mournful shroud
Rest reigns in empyreal blue.

Heracles in deep humiliation,
Faithful to his destination,
Served the coward in life's footsore path.
Labors huge wrought he, Zeus' noble scion:
He the hydra slew and hugged the lion,
And to free his friends faced Pluto's wrath;
Crossed the Styx in Charon's doleful bark;
Willingly he suffered Hera's hate,
Bore her burdens, grievous care and cark
And in all he showed him great,

'Til his course was run, 'til he in fire
Stripped the earthly on the pyre,
'Til a god he breathed empyreal airs.
Blithe he now in new-got power of flight
Upward soars from joyful height to height,
And as an ill dream sink earth's dull cares.
Glory of Olympus him enfoldeth,
'Mongst the gods transfigured standeth he,
From the nectar cup which Hebe holdeth
Drinks he immortality.'

TRANSLATOR'S COMMENTS.

Whether or not philosophical poetry exists is a problem which has often been ventilated and is mostly answered in the negative, but

we beg to differ from this view although we grant that philosophical poetry will necessarily be caviar to the general. Philosophers or philosophically minded thinkers only will take to it, and so its public will necessarily be limited.

Poetry differs from other literature, especially from scientific exposition, in that it expresses the writer's sentiments, and so anything that affects our emotional nature may became an object of poetry. The poet speaks from his heart and appeals to the hearts of his audience. He does not argue, he stirs the soul. If then philosophical thoughts are capable of arousing and elevating our souls and of inspiring us with the glow of enthusiasm, they may fitly find poetical expression.

Goethe's Faust in its main tendency as well as in many of its details, and to some extent Shakespeare's Hamlet, are philosophical; so also are quite a number of poems of Goethe, of Schiller, of Herder and of Lessing, but among them Schiller's hymn, "The Ideal and Life" takes a high rank, and we offer here to our readers a new translation.

* * *

No better recommendation for this anthem of Schiller's philosophy can be given than the fact that the poet's friend Humboldt, a philologist of no mean standing, admired it and read it in the secrecy of his study as a devotee would read a psalm or say his prayers.

So far as we know there exist three translations of this most difficult poem, one by Bulwer Lytton, another by Edgar A. Bowring and a third one by William Norman Guthrie. Those of Bulwer Lytton and Mr. Guthrie change the meter from the trochaic into an iambic rhythm, although the more ponderous cadence was most probably chosen on purpose by Schiller in preference to the easier and forward-running measure.

* * *

A few remarks are needed in explanation of Schiller's philosophy here presented in poetic form.

Schiller distinguishes between material concrete actuality and the realm of pure form. The former is the world of sense, or pain and struggle, of sin and disease, and of death, the latter has its existence in thought and serves us in life as the source of our ideals.

The realm of pure form knows nothing of the ills of life and it finds its revelation in art, "on the hill tops of the beautiful."

Schiller's sympathy with ancient Greece makes him utilize the figures of the Greek gods as the eternal types of pure forms, and he introduces the myth of Proserpine (or Persephone), the daughter of Ceres, to illustrate how pure form is incarnated into bodily existence and how the joy of sense, the eating of the apple,[1] renders the goddess subject to the sway of Orcus, the god of death.[2]

Among the pure forms are mentioned first (in Stanza 1) the celestials, the Olympian gods, then pure form herself,[3] further the archetype of manhood[4] in its ideal perfection, and lastly the souls of the departed, who have stripped off their mortal coil and wander as transfigured phantoms on the Stygian stream.[5]

Life is a struggle and must be such; the ideal remains unattained, and even the holiest is not free from guilt. But in art, in the realm of the ideal, we enjoy the rapture of a beatific vision; we find comfort in the beautiful and all misery disappears.

In conclusion Schiller describes Hercules, the ideal man of ancient Greece, characterizing him in words that remind one of Christ, the Logos made flesh, and this very consummation of Schiller's philosophy proves that his line of thought is nearer to Christianity than the pagan imagery of the poem seems to warrant. P. C.

[1] In the Greek myth it is a pomegranate, but Schiller prefers the more modern and popular view that it was an apple.

[2] Stanza 2, lines 7-10 and Stanza 4, 6-8.

[3] Stanza 3, lines 2, 3, and 4-6, "Form, the god's companion....herself divine."

[4] Stanza 4, lines 1-3.

[5] Stanza 4, lines 4-10.

CRITICISMS AND DISCUSSIONS.

THE FINITENESS OF THE WORLD.

No problem has perhaps been more fascinating than the question as to the nature of infinity. Infinity is commonly considered as the mystery of mysteries, and such phrases as "the finite can not comprehend the infinite" have become commonplace arguments of agnosticism.

However, it seems to me that the nature of infinity is frequently misunderstood, and we ought to bear in mind that infinity is not and can never be an object of our sense experience. It is a demand or postulate of thought. If in mathematics, for instance, we construct a mathematical space as a scope of our operations we omit all particular and concrete existences and retain only the abstract idea of motion. So long as this motion can be continued we think of its field as being without limit, and this possibility is called infinitude. Accordingly infinitude is not a thing but a potential function. Infinitude is never actualized, it is thought of as being actualizable and from these considerations we conclude that mathematical space is infinite. If we have progressed into the unlimited field of our operations we can resume our motion and can continue our progress without ever coming to an end.

Infinitude is primary in our thought operations. Before we start to move from a given point the scope of our motion stretches before us endlessly in all possible directions, a condition which we call "infinite space." The finite is secondary. It is the product of starting from one definite place and halting at another place. Sects or limited lines, figures possessing boundaries, are definite products of mathematical constructions, and they are comparable to the concrete existences of the actual world.

There is one point to be heeded: it is this that every concrete existence carries in itself this potential factor which we call infinitude. We have seen that when the mathematician begins to build

up his geometrical figures, he presupposes the idea of pure form, of the relational, of a scope of motion, which, as has been demonstrated elsewhere,* has been obtained by abstraction; but we must understand that the same is true of any objective existence, of particular and concrete things, and also of the world as a whole. The prevalence of motion presupposes a scope of motion, and unless there is some particular cause to set a limit to motion, the scope of motion is infinite. The same is true not only as to distance, but also to complications, combinations with other particular things and the innumerable modes of motion, which means that part and parcel of reality is its potentiality to pass through an unlimited chain of changes. We learn from this that potentiality is not a concrete bodily thing, but must after all be regarded as an efficient factor in the concrete world.

All the possible operations of a finite and definitely limited thing, its combinations with other concrete existences, its possible modes of motion, are infinite. In other words, though the maybe is not a material entity, it is a true factor in the material world, and in the same way space, though not a concrete thing, is an indispensable condition of actuality. In this sense man too, though a finite being, is a child of the infinite, and before every one of us stretches this grand mysterious realm of infinitude.

In spite of the awe which the unfathomable abyss of infinity has for us, I repeat that the idea itself contains nothing unclear, nothing contradictory, nothing mystical or mystifying, and in the realm of thought the idea of infinitude is simpler than the idea of any finite existence. We must only bear in mind that infinitude is never a thing but a potential, never a concrete and particular object but a function in operation which is thought without end.

In applying these considerations to the problem of the infinitude of the world we can only say that however unmeasurable the cosmos may be its concrete existence can not be infinite. The globe on which we live is a definite amount of matter with definite boundaries which, however, we may draw as we see fit, including or excluding the atmosphere, including or excluding the moon, according to the principle which for a special purpose we lay down as a standard of measurement. The same is true of the solar system and of the system of the Milky Way as well as of the probable existence of a higher system of many Milky Ways which by gravity or otherwise may be interrelated. One thing is sure

* See the author's *The Foundations of Mathematics*, pp. 61 ff.

that the entire cosmos of all concrete existences with its Milky Way or other systems of a still higher order, must be finite, for otherwise they could not be concrete. The concreteness indicates particularity possessed of definite limits, and thus we must come *a priori* to the conclusion that reality is necessarily finite. But this reality, as well as every atom, contains the potential function of infinitude. There is no boundary to its scope of motion; there is no limit to its possible formation and reformation; the infinite is always the background of the finite. The *maybe* is always the frame which surrounds the *is*.

The law of the conservation of matter and energy is no longer tenable if we understand by matter the chemical "elements" or the "mass" of the physicist. We know that chemical elements originate. The astronomer can watch their genesis in the several nebulas which we might fittingly call the gigantic retorts of creation. Similarly we may say that actual motion or kinetic energy originates from a state of stress or potential motion by some process which starts a world motion. As electricity is produced in a dynamo by shearing, as it were, positive and negative electricity, so the world-ether may have been in a state of rest until by some event a process was started which from this latent state produced the actual commotion needed for the procreation of the stellar universe.

The law of the conservation of matter and energy accordingly holds good only if we interpret its meaning in a broad sense, and the question of the infinity of existence would then be whether or not the amount of world-ether is limited, and the answer seems to be that it is a definite and concrete existence which is unmeasurable and inexhaustible but may be, or rather must be, of a definite amount. Should we assume that the existence of the ether is not definite, not concrete nor particular, we would have to attribute to it the mysterious qualities of the mathematical zero and only in this case should we be driven back to the old notion of the origin of the world from nothing.

Such are our notions of the infinitude or finiteness of the world from the standpoint of philosophy, and what Professor Arrhenius* says on this subject from the standpoint of the naturalist would bear out our considerations which are raised upon a purely *a priori* consideration of the nature of both infinity and finiteness. The problems which the idea of finiteness involves do not seem to me ripe for solution. They consist mainly in the consideration that if the world space is infinite while the world is finite, it stands to reason that

* See his article "The Infinity of the Universe" in the present number.

we ought to lose both its matter and energy by scattering it into the infinite empty space, which, we must assume, surrounds this finite world. But assuming that concrete existence is always finite and that ether itself is concrete, which means that every particle of ether is always at a definite time in a definite space, we need not jump at the conclusion that actual existence scatters. We know that energy radiates into ether, but if we assume that the amount of ether itself is finite there is no reason to declare that the ether will scatter into the empty space in which it swims. It may be that the empty space possesses qualities which are radically different from the space filled by ether or by gross matter. It may act as a limit from which particles of ether are repelled and into which the radiant energy of light can not penetrate. Until we possess instruments by which we can empty space of ether itself and study the character of an absolutely empty space we can only conjecture what reaction matter and energy may suffer at the end of finite existence. The time when physicists will be able to experiment with absolutely empty space is not near at hand, and it seems best not to speculate on the subject where any proposition must be a mere guess.

EDITOR.

THE DIVINE FIVE-FOLD TRUTH.[1]

It is the holy stillness of night. The world with its busy cares is asleep. And that is the witching hour of divine philosophy. In the silence, a Spirit comes to me and bids me write. Is it inspiration? Or is it the fever of the night's vigil? I do not know. But, somehow, my soul seems calm and I seem to see in a sort of mystic way the meaning of things which were dark before. At least I will obey the muse to-night and trust in the leading of the Spirit, for this seems like no human insight. Go on, sweet Muse. The night is young. I would feign revel in glorious discourse. At other times I have spoken through the long processes of logic. To-night, I would feign speak as an oracle.

THE DIVINE TRUTH OF "BEING."

First of all, there comes to me the old and divine truth of "being"—not static, inert "being," but centers of energy, conscious

[1] A more technical statement of the five-fold truth can be found in various studies already published. These include "Time and Reality," *Psych. Rev. Monograph Series*, No. 26; "Space and Reality," *Journ. Phil., Psych. and Sci. Meth.*, III, pp. 533, 589; "Consciousness and Reality," *ibid.*, V, pp. 169, 225; "Energy and Reality," *ibid.*, V, pp. 365, 393; and "The Ought and Reality," *Int. Jour. Ethics*, XVII, p. 454.

and unconscious, interlocking and interacting in space. These centers, through their dynamic, mysterious threads hang together as a whole. You can pass on the light beams from one to the other, even to the last. And they swing together in their rhythmic way in cosmic space. And part, at least, have life and mind and can catch the meaning of their relationship.

Spinoza, the God-intoxicated, had a vision of the universe as two winding corridors; each variegated fresco of one is imitated in the other, for the order of thought and things is the same. Each voice in one has its echo in the other, for the mind is the idea of the body. Proceed as you may through the infinite windings of one, no window opens into the other. But if eye hath not seen nor ear heard, and if it hath not entered into the thought of man that there is another half-world, is it more than the shadow of man's mind? And if any one doubts the existence of the other corridor, who shall prove it? Spinoza, in the passion of his fancy, supposed that if things exist and if we become conscious of things, then things must be repeated. But things are just such as we must meet them and appreciate them in the wide, common corridor of experience. No blind wall separates experience from the world of its interest and love; thoughts and things are part of one divine context. It is through thoughts that we can use things, and things become significant by entering into the context of thought. Thought and things are not two halls, but relationships within one dynamic living world. There is only one window to the significance of the world of things and that is thought, though things may hang in their own context, without being thought. Of what sort "being" is, of how many kinds it consists, whether psychological, electrical or some other kind of energy, and what constancies or equivalences it has, lo! this must be written in the books of science.

But "being," as falsely supposed by many an inspired genius, is not the only door to reality. It has been the habit of humanity thus far to emphasize some aspects and read out other aspects of reality, according to its temperamental, intellectual or practical bias. In this it has usually been right in the importance of the aspects it has read in, and wrong in the aspects it has read out. Thus the Eleatics of all time are quite right, that there must be "being"—stuff, constancies, thickness, grist. But because there must be thickness, must there be absolute thickness, absolute constancy? Could not science and practical life get on with relative constancy? So far

as our experience goes, we do so get on; and in a manner find our way.

THE DIVINE TRUTH OF TIME.

Instead of writing a poem to the solid, as Parmenides does, why not write a poem, as Heraclitus does, to divine flux, with all its sadness and novelty? Our hopes and aspirations, as well as our doubts and fears, are built upon the consciousness that the universe is not absolutely made, but in the making; that the future may divorce the present, however firmly thought and its object are wedded now—sometimes by altering our attitudes, when the facts we intend seem constant; sometimes by altering the facts in conformity with our more constant ideals. But our attitudes are facts, too, part of the dance of attention in the ever shifting focus of object and interest in the drama of experience. However viewed, it is true that reality is vibrant, that it is ever in solution, that it glows. And no static view can ever piece together this motion and life of real process. We can hold only part of reality in the net of our concepts, the rest trickles through. And while the constant residue is more important for science, what trickles through may be the more characteristic of life. True, you can not prove from the fact of change, any particular change or rate of change, nor deny any particular constancy. But you can prove that if there is change, there must always be change. For, in the infinite æons, if time or change were finite, it must have run its course untold ages ago. Change must be taken as real and underived, prior to all our ideal measurements, if it exists at all. This change value, I call time. Let the pæon be chanted to eternal time—double visaged time, with hoar frost on the brow, looking backward, and the fire of youth in the face, looking forward, fading Autumn and budding Spring in one.

If we center our interest on the flowing, the novel, the irreversible and the surprising, we can easily fall into the mood that only the flow is real; that the flux is absolute and that there is no such thing as constancy, or truth even in part; that the *transforming* of the stuff of meanings and of matters is the real and that uniformities are but illusions. With Omar Khayyam we may come to say:

> "One thing at least is certain—This life flies:
> One thing is certain and the rest is Lies;
> The flower that once has blown forever dies."

Yes, all that is born in the pangs of earthly beauty shall fade and die. This would be infinitely sad, if spring and youth were not re-

born with new beauty with the turn of the year. But while "the bird is on the wing," why deny such seeming perching, such constancy as there is, such prediction as experience proves?

THE DIVINE TRUTH OF SPACE.

And why should not some one write a poem to the void—the glorious expanse of space? For what a congested world this would be if it were condensed into a mathematical point—no looking at each other, no embraces, no starry heavens, no gravitational equipoises of swinging masses, no differentiation of individual centers, no canvas for the cosmic artist to spread his sunsets on, no marshaling of the ranks of tonal harmonies, as a result of this absolute condensation, all for want of room. If you have space, you can put as many holes into it as may be necessary, shooting it through with energetic centers, conscious and non-conscious. You can stretch your gravitational threads, you can pour in your luminiferous ether and spread out your electro-magnetic field; you can fill it as full as imagination and convenience may dictate. I would not make space everything, carving a universe out of it by means of geometrical figures as some have done. But you must presuppose your space, which you so thanklessly ignore, to have your side-by-sideness of centers, your free mobility, your perfect conductivity. No hindrances there to the wheels of Charles's Wain, no opaqueness to the mercurial messengers of light,—only sublime distances making feeble man's artificial measures, where constellations dart through space to the Pleiades. Viewed from the side of space, your bodies and energies become interferences—departures from the pure limit with which we start. To divine, neglected space, bespangled with many a star for diadem and begirdled with lightning, let my song go forth.

THE DIVINE TRUTH OF CONSCIOUSNESS.

And what shall I say of consciousness, illuminating nature, the manifold world of process and its flow? To be sure, it would not appear except for the complexity of the world of process—its organs and contexts of relations. But they in turn would have no significance or value apart from the divine light of consciousness. It was a noble insight, that of the Sankyah philosophy in far off days and climes. It is only as nature (Prakriti) develops senses and intellect on the one hand, to match the motley variety of the world on the other, that consciousness can illume the world. It is Nature that furnishes the subject and the content too. Consciousness is a neutral

light. It only adds the awareness. It cannot be responsible for plurality of egos, any more than for unity, as the Sankyah supposed. Nor does nature vanish with consciousness, but becomes significant nature, aware of its pulse beats and its destiny. In itself, consciousness has no variety, no color, no direction. But with it comes to light the color and variety and meaning of this whole checkered, flowing world. No wonder the Sankyah philosophers, with their longing for mystical peace, for the negation of strife and variety, centered their gaze on neutral consciousness and allowed nature to vanish with the abstraction of attention.

How long before the mysterious awakening; what vicissitudes of change; what migration of spirit through cosmic spaces; what dizzy ages of evolution of organs and of mind before my spirit saw the light, who can tell? But when consciousness does illumine the patient face of nature, what beauty of significance is there—expressed in part; in part, vaguely felt and only half understood. What opportunity is there for sharing in the directive creation of the divine destiny, which nursed us to this end? Elsewhere, no doubt, the light has shone before; soon the light here shall flicker and go out again, as the soul goes forth to its new mysterious birth. All this—the before and after—is hidden in the night of our ignorance, but how glorious to be awake just now, to catch to-night this glimpse of the eternal procession of the ages. Whatever may be the destiny of mind in the cosmic whirl of change, thank God for this.

When I take my journey in the sea of energies, midst ethers and star dust, perchance through skies and clouds to stars unknown, perhaps to linger here midst dance of circumstance, who can tell when and how I shall appear? But I believe that the light of consciousness shall shine for me again; that I shall see anew the glory of God's world; that I shall feel the sympathetic touch in the march of the æons as I never have before. If so, what does it matter how long I sleep, waiting for the call of God's energies to the beauteous vision. To consciousness, lighting the world, in one flash bringing the divine and human face to face, let my hymn be sung.

THE DIVINE TRUTH OF FORM.

And, then, what hymn can I sing worthy of the glorious divinity of form? For who would want a chaos of moving pictures like the nightmare of a dream? Even the consciousness of such a crazy quilt of a dream would be less to be desired than the annihilation of Nirvana. But we have the conviction that some facts are worth

more. In the shifting and relative shapes of the flux, the soul comes to the insight, now and then, of eternal beauty. Restless sound is woven into harmony, the chaos of color into divine form and expression. The world of things, to some extent, can be recreated into the world of ideals. Who can wonder that Plato found the idea of form, of significant unity, diviner than all the flux in space and would allow to worth alone the prize of being?

Let the materialist claim that beauty is a physiological relation; that it depends on a certain structure and its motor reactions. He does not contradict the diviner insight that form—significant relationship—is an original and underived aspect of reality. True, reality must prepare the spirit for its realization and appreciation by preparing the organism. Beauty and right, as the result of survival selection, must come to us first as intuitions, before we can understand or separate the form from the matter. But it may still be true that beauty suffuses the whole of things; that the flux has worth only as it is sifted through eternal form; that nature's beauty and, still better, our conscious creation of beauty, is the imitation of a reality of which we have but a vague intuition. Nature produces lavishly, and some of its gifts also have form as read or appreciated by human nature. This is not mere chance. It is part of the selective evolution of reality, for human nature is part of nature. Beauty is but nature become conscious of its formal character through its more developed organs of human nature. Thus do nature and human nature conspire to produce the sunset and the symphony.

As the music of each passing moment dies into the recessional of the past, one thing remains amidst the changes and chances of clashing masses and souls—the direction of the process. That, at least, is absolute, eternal and divine. What is this direction? Is it more than that the universe in patches expresses ideals and so becomes immortalized? Is there a grand finale? If time is infinite, this should have come to pass infinite ages ago. Yet for a superior insight, the patch-work may be a scheme. That it is so remains for us an act of faith—a faith which, like every faith, must be justified by its consequences.

The conclusion of my poem, which shall remain unwritten, shall be that I own the supplementing concreteness, the real thickness of life as all of these, interpenetrating in one common world. Reality reveals itself in five different ways. It has five windows. It reveals itself to our purposive endeavor as a world of restless energies with their relative uniformities. It reveals itself further as

time, which in the flux of selves and things, gives the lie to the past and creates for the soul new mansions of meaning and value. We must also orient ourselves to space, the play-ground of energies where the heavens spread out like a curtain and clouds are moved back and forth as draperies. Under certain conditions of complexity and intensity, the whole is lighted up by consciousness; and lastly running through it all as the invisible warp of the many-colored woof there must be form—the direction which our finite minds strive to unravel. This is the *Divine Five-Fold Truth*—the five doors which we must enter if we would bask in the divine illuminating wisdom.

The night is far spent. The intoxication of soul is wearing off. The cock crows, announcing that the matins is at hand. The goddess of drowsy slumber will soon lift her silver veil from off the naked earth, and depart. The bustling, jostling, wakeful, petty cares will return with the dawn. Thank you, Spirit, for divine philosophy. May it prove sane when viewed in the glaring light of day. At least the bliss was great, while it lasted. And now into Thy care I commit my mind, while I, too, join the unconscious world in the soft arms of sleep.

UNIVERSITY OF KANSAS. JOHN ELOF BOODIN.

EDITORIAL COMMENT.

John Elof Boodin, professor of philosophy at the Kansas State University, an ardent pragmatist and personal friend of the late Professor William James, writes in the current number of *The Monist* a delightful essay on "The Divine Five-fold Truth" from the pragmatist point of view. He writes in the letter accompanying the manuscript, "As you seemed to like my 'Philosophic Tolerance' I venture to send you another literary attempt." And he is right. Our opposition to pragmatism is not a condemnation of its methods but only a protest that it is a consummation of philosophical development. Pragmatism like agnosticism is not a movement belonging properly in the realm of philosophy, but an outburst of literary enthusiasm sprinkled over with psychology and philosophy; the former not without appreciation of pathological phenomena, the latter in the line of subjectivism and easy-going pluralism. Our objection to pragmatism lies in its claim to be the only philosophy, involving a wholesale condemnation of all former philosophies, absolutism, dogmatism, monism, rationalism, and kindred isms, as

based on unwarranted conclusions. This attitude applies not only to philosophy but is extended to science itself.

In contrast to pragmatism we claim that science, the search for and attainment of objective knowledge, is possible; and this involves that philosophy also as the science of the sciences is not a phantom of the human mind. But while philosophy as a science is a possibility, and while pragmatism's claim to be the only true philosophy must be rejected, we would not be opposed to the pragmatist indulging in his conceptions of life and the world. Professor James and his followers fight windmills when they insist that all former philosophies believed in absolute truth, in absolute relations, in absolute being, involving that there must be absolute thickness, absolute constancy, etc.

It is true enough that truth grows; but the new truth builds upon the old truth, and if the old truth be really true, its nucleus will remain in the new truth. But for all that, the attitude of a man, his temperamental bias, is an important item in our conception of the world and one that should not be neglected. It is worth studying and it offers us an inexhaustible material for poetry.

It would be wrong therefore to say that because philosophy as a science is possible, our philosophical literature should be limited to strictly scientific works. Not every man is a scientist. On the contrary, scientists constitute but a very small minority among rational beings, and therefore there ought to be non-scientific literature. Because mathematics, chemistry, astronomy and other sciences are possible, shall we deny the right of existence to Homer, Shakespeare, Goethe and the many essayists? The poet too has a right to enter into the field of philosophy and to express his thoughts as to how the world-conception offered him by science stirs his soul.

The Monist is not limited to the philosophy of science. Its columns are open to the philosophical conception of scientific results, to religious views as modified by scientific inquiry, and also to art and poetry in their philosophical aspects. P. C.

REPLY TO EDITORIAL COMMENT.

To the Editor of The Monist:

I have read with interest and appreciation the editorial comments on "The Five-fold Truth." I congratulate *The Monist* on its breadth of scope. It is one of the few philosophical journals in

which Plato would have been permitted to express his various moods. And while the rest of us dare not aspire to the class of Plato, it is pleasant for us, too, to give rein now and then to poetic fancy. It is true that we must not confuse poetry and science, but it is also true that science has its own poetry. While pragmatism has not been insensible to the softer muses of literature, it has not, I think, been indifferent to the severer muses of science. It is a pleasure to be mentioned, in whatever way, with Wm. James—not the late, but the ever inspiring genius in American thought. Perhaps no one's friendship has meant so much to me, and I believe that his guidance is in the right direction. Philosophy, however, is necessarily individualistic in its efforts, even if not in its results; and much as I am indebted to others, I do not want any one to be responsible for my small attempts, be they successful or unsuccessful. Truth must be judged coldly on its merits, irrespective of personal or party affiliations. It would indeed be presumptuous to ignore the past. One cannot defeat the genuine results of thought by giving them labels. We must take them for what they are, whether called pragmatistic or rationalistic or by some other name. The great systems of history overlap; and sometimes the overlappings are the more significant parts. In the meantime, while history is identifying the significant voices in the Babel of many tongues, we must be tolerant, for only so can we judge sanely. I thank you for extending this philosophic tolerance to pragmatism.

J. E. Boodin.

GAMES OF CHANCE.

A Timely Essay on Certain Possibilities of Gallant Living.

The present is a time of blood-tests. Now I should not be a bit surprised, if, could the facts be known, all times would be found to have made blood-tests. Not that all have counted the red corpuscles or the white corpuscles or have been learned about phagocytes and spirochetes and trypanosomes and other agents of health or disease, but simply this. All must have had some disposition to trace local symptoms, especially local diseased conditions in the body personal or let me now add, at once making the suggestion of the blood-test a metaphor, in the body social, to such a general basis of life as the blood. Be this, however, as it may, our time with its commanding presence, among all its other grounds for importance, is

a time of the blood-test. Closely and minutely, using the microscope or something analogous to it when we need to, we are nowadays constantly looking to the sources and bases of life for our diagnosis and our treatment of the various conditions, moral as well as physical, which for good or for ill affect humanity.

And the habit of taking chances, of playing at games of mere chance for some valuable return, can claim no exemption under the rule. Apparently only a local trouble manifested in the offensive practices of "sports," of professional betters and gamblers, it can not fail to appear in some form or forms, perhaps as cause, perhaps as effect, of the local ill, in the general life of society. What is society, in fact, but a natural training-school for the various professions, for all of these, reputable and disreputable, and what are the followers of any profession but, if not formally, then informally, the accredited graduates of some department of that school, being produced by it and, as with all loyal graduates, ever after supporting and strengthening it through their influence and example? The "sports," then, personnel as they are of one of society's informally—nor am I altogether sure that I need to say informally—authorized professions, are in some sense, yes, in some very vital sense, only what all in society are, and they are actually doing what all are doing. This being true, it must pay to make the timely and very practical blood-test. It must pay, with such care and minuteness as the conditions require, to find out wherein the members of society at large are also playing at games of chance.

What then are the facts? Always such a brutal question! In what ways, unconsciously or consciously, without deliberation or with it, are we and our fellows generally, like the betters and the gamblers, relying on chance for attainment of something worth while? How are we given to "get rich quick" schemes, whether the returns sought be money or any other good, such as social position, public office, reputation or even moral and spiritual excellence? In short what games of chance can we find, when we look closely, in the life-blood of society?

In response to this pressure for the facts, ordinarily hidden from view, no Latin or Greek names like spirochetes or trypanosomes or any others are required, although such names I suspect could be coined very easily if really desired. Without using learned names then among the games of chance to which, it is true for the most part unconsciously, the members of society are widely addicted, I would call attention to the following list, which is rather long and,

I am sure, will not be found lacking in commonplaceness: carelessness, of the hunter, or the automobilist, or the trustee, or of any of that large class of the people who " didn't mean to do it" or who wouldn't have meant to, if by chance they had done it; disorderliness, which in all situations as well as on ship-board involves large and serious risks; idleness and indifference of him who dilly-dallies, of the large majority of the voters of the country, of any one who waives or just neglects responsibility; blindness of the sort that doesn't look; dependence on circumstances, on neighborhood or companionship, on birth and its assumed privileges; easy diversion from one's chosen pursuit, such an insidious foe to any success and so, obviously, making success, if it come, only a happen; and, lastly, stale possession, that is, possession without effort in the attainment and without use or at least without productive or vital use after the attainment, being such possession, for a notable example, as that which many if not most children have in what their parents have acquired. As to this last game of stale possession and particularly as to the selected example of it, is it not one of the hardest facts of this or any time that parentage so often defeats its best purposes by training its children to be only—and here is a strange instance of double meaning—children of fortune?

But also quite consciously and deliberately do the members of society at large have their games of chance. Thus the habit of entering upon specific tasks consciously unprepared is widespread. Students and teachers the country over are addicted to it but certainly have no monopoly of its hazards. Conscious incompetence, however, is even more flagrant and is almost as common. From this springs quackery, which has its large following not merely in medicine but also in every other occupation or important relation. Public offices of all sorts are burdened with quackery and its amazing greed, and all the professions have to contend with it. A Christian clergyman, for a timely if not novel illustration, ignorant of modern society and its problems and of the effects of modern scholarship on the history and the interpretation of the Bible or of the church, at least ought to be made to show cause why he should not be condemned for a quack. Surely he is incompetent and probably consciously so, and being incompetent, he is, like any quack, only "playing" for his large stakes. Could irreverence go farther? And, besides lack of preparation and besides conscious incompetence, there are many other similar games of chance deliberately entered into and put in competition with reputable occupations. Last in this

second list, however, I mention "high finance." This needs only mention and I need not say that it is not by any means confined to Wall Street and other places of the same sort. Just as there are "get rich quick" schemes for all things worth while, so are there "high" methods for them all. Nor is the situation ever improved by the disposition to eliminate the element of chance through the use of loaded dice sometimes called "wires" or "pulls." Indeed high finance might be defined as playing for very large stakes with loaded dice, the loading being proportional to the elevation. Thus is one offense easily compounded with another, but suffice it to say here, high finance and low gambling evidently are extremes that meet.

The suggested blood-test has now been made. The facts are before us. The habit of playing for possible but really and obviously unearned returns appears in the blood that courses through all parts of the social life. And with the habit, let me add, goes a peculiar and most inordinate greed, mentioned already as belonging to the particular game of incompetence. By a strange law, the more a man relies on mere chance the more return or reward he seems to expect for his trouble. Perhaps, too, his greed, being so justified, leads him to think that he has a right even to cheat chance by loading his dice. How else, forsooth, can he make sure of the return that is so obviously—think of the risks!—his due? Splendid casuistry, of course. Indeed its argument runs so easily that one has to wonder if, like much if not all casuistry, it may not possibly be on the surface of some deep truth. What deep truth may come to light before we have finished, but now a very practical question must be met.

Thus, wherein is gambling wrong? Why may we not rely on chance? Why may we not, whatever the ways and means, get all we can of all the things that are worth having? If acquisition be a right or even a duty, why object to any successful method? After all is said, can there really be anything inherently bad in getting rich by chance?

In reply to these questions three reasons suggest themselves at once, and every one of the three is cogent. First, so many have to fail, the game of chance as in any lottery being successful to the very few. Second, success, even if it come, is very precarious, the "new rich" always walking on very thin ice. And, third, downfall, if it come, is very brutal, since children of fortune ordinarily receive little if any mercy. But cogent as these three reasons are, not one of them has for me the weight or the importance of the reason

that follows, for not one of them is as direct as this. Fourthly, then, all games of chance are essentially profane. They are like so much swearing. Only, their offense is not in spoken word but in overt action and, I suppose, being in the act, they are really more seriously profane than words can ever be.

But what can my meaning be? All games of chance are deeply, actively profane for just this reason. They drag low one of the most sacred factors of all life. In the whole purview of human experience nothing is more sacred than chance. Sometimes we do call it by another name, such as uncertainty or possibility or opportunity, or by names even loftier in their suggestion than any of these, but the name is unimportant. By whatever name it be called, chance is a very sacred thing. It is, like property or ambition or self or sex or many another affair of life, always of course a basis of much evil, but also always a great good. In it, as in those other things, the worst and the best in life seem to have a common ground. As for the worst in chance we have already seen certain serious diseases in the life-blood of society. Now, with regard to what is best, with regard to the sanctity of chance, we have to consider closely and carefully the following:

The spirit of adventure, to begin with, has been a great maker of history. There had been no pioneers and no frontier without it. Yet adventure has ever been a game of chance, often a very noble game of chance. Remove its uncertainties and the many dangers incident to them and you would rob it of its splendid romance and in general of a peculiar quality, I know not by what word to describe that quality, which has always belonged to it and which has greatly enriched human history and the life that is ever looking to history for its inspiration. Is there a nation whose patriotism at any time does not depend for its incentives to new achievement upon the adventurous spirit of the past? And then, quite akin to adventure but on one side more practical and on another more intellectual, or say, as to both sides, less romantic and more soberly rational, there is experiment. Experiment, not less than adventure, is essentially a relation to the possible but uncertain. Certainty as to its results would destroy the real although somewhat subtle courage so important to its interest and worth. In its more intellectual phase experiment has been, as it were, the pioneer at the frontier of all the great scientific discoveries of any time and of course particularly of recent times. It is, too, the leading attitude of mind in the explorations or speculations of all philosophy. In

short, for the intellectual life, experiment, or its great instrument the "working hypothesis" that is not without its analogies to the weapons and the armor, including, I suppose, even the sword of the spirit with which heroes of old went forth in quest of something worthy or holy, is a sacred thing and is sacred not in spite of the uncertainty implied in it, but, apart from other grounds, because of it. And in real life, so called, that is in practical affairs, in industry and politics, in morals and in all social relations, experiment is as worthy as character, for, at least as much as anything else, it is what makes character.

But experiment and adventure both require courage, which is nothing more nor less than the ability to face uncertainty or, better put, to seize on what is merely possible. As has been said in so many ways for so many centuries, all great success depends on the courage of failure. A pretty paradox, but as vitally true and holy as it is paradoxical! And to courage, among the marks of life as a noble game of chance, one must add—the novelty being, it is true, hardly more than in the names—heroism and unselfishness. The last of these has almost a suspicion of a misnomer, but, without pausing for any investigation, the heroic or the unselfish person risks much if not all that he has and so, remembering that a wise man once went so far as to define philosophy as "a sacred disease," in imitation I would now boldly call him that lives heroically and unselfishly a sacred gambler. Selfishness never risks anything, or rather it never risks what is the self's own, having little hesitation in playing fast and loose with what belongs to others, but in all gallant living there is the deep, pure holiness of the merely possible. Certainty has a brutality about it or a worldliness that actually suggests such a man as Thomas, strangely known as the "doubting Thomas." Poor Thomas insisted on having his dice loaded. The heroic depths of real doubt were never even suspected by him.

Finally in this noble list I have to mention religion. To define religion is by no means simple or easy. My notion of it, too, may be quite different from what many have seemed to think about it. The feeling of absolute dependence; apprehension—of course through some faculty more subtle than that of logical reasoning—of the infinite; pure faith or belief or spiritual vision; love of God or communion with God; these have all been ascribed to it, these and much else besides. Yet somehow none of the many accounts of religion that are known to me, even when such words, so easily misconstrued, as faith and belief, are used, really make of it or mean to make of

it a relation to certainty, and with this fact—or should I call it simply a reflection of my own?—in mind, were I to define religion, borrowing a phrase already frequently employed here, I should speak of it as a personal attitude, an always assertive and sometimes heroic personal attitude, not towards the certain, but towards the *merely possible*. Not that certainty may properly be denied to religion, but, if called upon to choose, keeping in view the more common usage of terms I must say that possibility rather than certainty characterizes the object of religious consciousness and the matter or substance of religious life. To make religion, very much as to make any of those other things, adventure and experiment and unselfishness, a relation to certainty, would be to compromise what is best in it. The certainty would take from religion its spiritual purity. Truly God is a spirit, and, if he be a spirit, if he be not just a perfect being, not merely some one who simply exists and so, when found, can just be believed in without any effort or assertion on man's part, that is, without any human demand being made on the only thing that is truly infinite, namely, the possible, but not certain, then is religion, and only then, as I think, can religion truly be, a character-making agent or power. Religion is then a matter of volition, or what James has called, if I understand him, a "will to believe." Again, one can not merely have religion or get it, as some seem to have or get things that just exist, money, for example; one can not just find God or confront and recognize him; on the contrary, assertively appropriating to oneself and one's life what, so *spiritually* real is God's nature, only may be, one must, with a real effort, worthy as it is heroic, make or will Him. God is, then, only what men, laboring in the field or in the vineyard of possibility, are bent, in spite of opposition and real danger, on asserting and achieving. So subtle a philosopher and mathematician as Pascal, of the seventeenth century, once advised a young man, to whom he was writing, to treat the Christian religion and especially the Christian belief in immortality as a wager probably well worth making; and, although one's first feeling must be a feeling of resentment against such a seeming irreverence, yet with reflection must one not see, even while objecting to Pascal's way of expressing himself in the language of profane living, that he was near to a deep appreciation of Christianity and of religion in general? But I would repeat: Religion is a personal attitude, an always assertive and sometimes heroic personal attitude, not towards the certain, but towards the merely possible.

So, in review, are adventure and experiment and courage and heroism and unselfishness and even religion itself all games of chance, but noble games of chance, and we can now understand clearly how it is that gambling or "playing" for possible but unearned returns, be it the gambling of society's accredited professionals or that of ordinary commonplace men, the gambling laity, who are careless and disorderly and needlessly blind and incompetent and often, such is their greed, dishonest in their "play," is essentially profane, dragging low one of the most sacred factors of all life. Gambling in any form seriously misuses or abuses just that from which, properly used, such things as courage and great heroism and religion have their rise.

But, the profanity of gambling having now been explained with special reference to its character as a game of chance, there remains to be said something, at least not less significant, with reference to the dice—a term that should be taken figuratively, not merely literally—and to the winnings. He who takes chances, we have been told, deserves a reward for his risk, for the self-denial of it, and may accordingly even load the dice on the strength of this desert. So ran the gambler's argument in casuistry. In this argument, however, there does lie a great truth, which, if I can succeed in presenting it, will only make the profanity of him who, pretending to take his chance, would basely cheat chance, appear still more offensive. Thus, truly the self-denial of risk merits a reward, and the right so constituted may always be protected by such effort to eliminate chance as the self's own powers of body and mind, openly and fairly used, may enable. Loading the dice, in other words, is only the gamblers' lazy and cowardly substitute for what all who take risks have a right to employ, that is, for what among those who live gallantly takes the form of fair play, which as I regard it is made up of personal effort, honesty and the skill that comes with attention and understanding. That intelligent attention is a factor of all fair play many men quite forget, but it is surely an important factor. Fair play, then, also always loads the dice. The game of life, fairly played, gallantly lived, cannot be a losing game. Risks do have their rights and their certain winnings and never was better way, I imagine, of interpreting the time-honored saying that virtue is its own reward. Virtue is its own reward, if the acts by which it would explore and exploit the region of possibilty be the acts of real effort, if honesty pervade them all, and if the understanding derived from candid study and close thinking have en-

lightened them. Virtue's reward, moreover, has always satisfied a greed not merely for certain goods, but also for still larger possibilities. Whoever wins, be he gambler or gallant, wins the chance of winning more.

This essay on the possibilities of gallant living may very properly close with the simple remark that ability to take chances is a power possessed by every individual. Also, as in the case of any other power of individuals, it may be spoken of as one of any nation's important resources. Nations have so-called physical resources, that is, water-power, coal mines, climate, soil, strategic positions and the like, but they have also resources of a less tangible yet surely not less important sort in the peculiar character of their people or in the more general characters of all human beings and of these subtler resources the ability to take chances, is, I would assert with great emphasis, of inestimable value. Carefully protect and develop this power by proper training in the home and by a public education at school or in the civil and political and industrial life or in the church that will induce habits of care and orderliness and a disposition to honest thought and effort and to independence in both of these, and the nation will grow and grow strong, for its dice will be honestly loaded. Waste this great power with gambling, I do not mean the so-called professional gambling, for that is only local and relatively insignificant, but the gambling which is manifest in the circulating life-blood of the people at large, in the shiftlessness and the shoddyism, in the "get rich quick" schemes of all sorts and the high finance and in all the other profane uses of a life of chance, and the waste, whatever be the apparent winnings, will end in weakness and disaster. The modern nation is indeed rich, rich in the power of taking chances, but out of the wastefulness that has gone on for so long and that is so widespread there comes a call that must not go unheeded, for men who, instead of gambling, will play fairly and live gallantly.

UNIVERSITY OF MICHIGAN. ALFRED H. LLOYD.

WORK TO BE DONE IN BUDDHIST CRITICISM.

AN APPEAL TO CHINESE SCHOLARS.[1]

Perhaps there is nothing more romantic in the history of religion than the spectacle of a Parthian prince renouncing his throne in A. D.

[1] This communication was inserted by mistake without correction in the January number of *The Monist* (pp. 158-160) and is here reproduced in its proper form.

149 and going to China as a Buddhist monk. This remarkable man, An-shi-kao by name, spent his life in his adopted country, rendering parts of the sacred writings into Chinese. According to Nanjio's *Catalogue of the Chinese Tripitaka* (Oxford, 1883), the prince translated 176 original works, of which 55 are extant. Judging from their titles, 43 of these are Hinayana. Anesaki, in his priceless essay, "The Four Buddhist Agamas in Chinese" (*Transactions of the Asiatic Society of Japan,* Tokyo, 1908, pp. 17, 18; 28-31) identifies forty-four of these works with texts now extant in the Pali canon.

Let us look at some of these texts, and see what kind of books were valued in Parthia and China at the time of Justin Martyr! Going through the Pali Nikayas in regular order, the first that we find is the Mahanidana-sutta (Digha No. 15). This was considered important enough to be included in Grimblot's selections from the Long Collection (Paris, 1876) and in Warren's *Buddhism in Translations* (Cambridge, Massachusetts, 1896). The next is No. 31 in the same Nikaya, also published by Grimblot, and finally there is the last sutta therein, No. 34, the *Dasuttara,* which gives a remarkable survey of Buddhist doctrine, under categories numbered from one to ten.

In the great Middling Collection (as I prefer to call it, because it is named after the medium length of its sūtras, and not after its position in the Agamas, which varied) our Parthian prince hit upon No. 6, which Rhys Davids chose in London, 1700 years later, for translation into English in *Sacred Books of the East,* Vol. XI. Next we come to No. 52, and then to No. 87, then to No. 113 (on the "True Man") and finally to No. 141, the "Analysis of Truths." In this sutta Buddha exhorts the disciples to obey Sariputto and Moggallano.

Besides these there are texts from the Classified and Numerical Collections, one of which is Buddha's First Sermon, also included by Rhys Davids in his volume of suttas aforesaid.

Besides the illustrious Parthian, many more translators of differnt nations went to China to continue the good work, and one of these, in the third century, translated the 91st sutta of the Majjhima, the Brahmayu, which gives the vivid account of Buddha's personal appearance, his table-manners, his gait, and daily habits, first made known by Spence Hardy in 1853. In Hardy's mediæval version, Buddha says grace, but this is not in the Pali. It would be inter-

esting to know whether the third-century translator found it in the lost Hindu original before him.

In this interesting old sutta, we have a full-length life-picture of Gotamo of undoubted historical truth, and I often say that this discourse alone justifies the assertion that we know more about him than about Jesus.

Now, it has long been my contention that these Hinayana texts of the second and third centuries deserve special study. They are the first Buddhist sūtras of the primitive collections which we can date. The books translated into Chinese in the first three centuries were largely Mahayana and later on they were altogether so. Could not a little text-book be made of the Pali suttas translated by the Parthian, with, say, the third-century Brahmayu added? Give the original Pali, and note Chinese various readings, as Anesaki has done in my *Buddhist and Christian Gospels.*

This perhaps is the most crying need of Buddhist scholarship. Next to this, if not before it, I rank the translation of the Great Council Discipline (*Maha-Sanghika-Vinaya*). This sect was the sworn enemy of the school of the Elders who have transmitted to us the Pali. Each sect accused the other of falsifying the scriptures, *so that any agreement between them would go back to an enormous antiquity.* I do not myself believe that the final schism took place at Vesali, as the Ceylon Chronicles would have it, but at an obscure council held by Agnimitra, about the middle of the second century B. C. My reasons for this are the statements from the Great Council Discipline translated by Samuel Beal, in his learned Introduction to *S. B. E.,* Vol. XIX; and, by the way, I was lately very much pleased to see his pioneer work highly commended by a distinguished French sinologue.

The Great Council Discipline was brought to China by Fa-Hien in A. D. 415, and some scholar who had overlooked the translators of the earlier centuries once asserted that this Discipline was the first Buddhist book we could date!

One of the most curious things in this Discipline is its list of the sacred books, and it was translated for us by Suzuki in *The Monist* for January, 1904. The present writer has taken occasion to draw conclusions from this in previous articles. (See, for example, the San Francisco *Light of Dharma,* January, 1905, and the fourth edition of *Buddhist and Christian Gospels,* Vol. I, pp. 82 and 266.)

There are reams upon reams of translation and critical work

to be done, but, in my opinion, these two are the most elementary, most necessary and most immediately pressing. I appeal to the sinologues of France, Holland and Japan to emulate each other in this important task.

ALBERT J. EDMUNDS.
HISTORICAL SOCIETY OF PENNSYLVANIA, Nov. 16, 1910.

PROF. K. BORINSKI ON W. B. SMITH'S BIBLICAL CRITICISM.

Prof. Karl Borinski has devoted to a discussion of Prof. W. B. Smith's theory of the pre-Christian Jesus an exhaustive article in a German periodical of Leipsic entitled *Xenien*. Extracts from the article were translated in *The Monist* (October, 1908). He recommends this most destructive and radical method as finally leading to new positive issues. He says:

"We look forward to the promised continuation of our author's researches in such a well-ransacked region, indeed, with intense expectation. In this remarkable investigator, with all his radicalism, there breathes no breath of destructive zeal, but rather, through and through, a constructive and requickening criticism. . . . Investigations like the foregoing furnish clear proof that there is no better antidote for the much decried 'destructive' tendencies of biblical criticism than its own self—than resolutely to follow out its most delicate and 'dangerous' researches and reasonings to the very end."

The "constructive and requickening" quality of this criticism is particularly conspicuous in the "promised continuation," shortly to appear in German under some such title as, "*Ecce Deus*, the Witness of the Gospels to the Pre-Christian Cult of the Jesus."

GENERAL CONGRESS OF MONISTS.

Those German Monists who have been associated together under the name of *Monistenbund* for more than four years, intend to convert their fifth annual meeting into a General Congress of Monists. It will convene at Hamburg, September 8–11, 1911. Professor Ernst Haeckel has consented to act as honorary president and the program contains very prominent names, including among its lecturers Professors Svante Arrhenius, of Stockholm; Friedrich Jodl, of Vienna; Jacques Loeb, of New York; and Wilhelm Ostwald of Leipsic, each of whom will speak on his own specialty.

In order to dispel many current false ideas about monism, the *Monistenbund* adds in its announcement the following paragraphs with regard to its true aim and significance:

"Monism hopes to build up a scientifically tenable conception of life and the world, and to attain the practical realization of this conception.

"Monism recognizes no super- or extra-natural beings or forces that might interfere arbitrarily in the processes of nature or of human life.

"Monism, threfore, instead of any supernatural revelation, sees in religions the productions of the emotional and spiritual life of different peoples in different times.

"Likewise, to monism the demands of ethics are not supernatural, but the necessary result of communal life. Just as ethics has developed from human nature, so is it capable also of further development. To build up a system of ethics on these principles monism regards as one of its noblest tasks.

"Monism regards the state as the result of man's struggle for existence and his tendency to organization, and considers it the ultimate aim of the development of the state to combine the greatest possible freedom of the individual with a perfect order of the whole.

"Monism desires a union of all individuals and societies that take their stand on a scientific world-conception, in order thus to be able to meet the influential powers that are inclined to oppress freedom of conscience and investigation."

BOOK REVIEWS AND NOTES.

THE HILPRECHT ANNIVERSARY VOLUME. Studies in Assyriology and Archæology dedicated to Herman V. Hilprecht by his Colleagues, Friends and Admirers. Chicago: The Open Court Publishing Co., 1910. Pp. 450. Cloth, $5.00.

This volume in honor of the twenty-fifth anniversary of Professor Hilprecht's doctorate and the fiftieth of his birth brings together no less than thirty articles from as many different scholars on the other side of the Atlantic. From Austria, Bohemia, England, France, Germany, Holland, Hungary, Italy, Syria, Sweden, Switzerland, and Turkey, distinguished Assyriologists and archeologists have sent their contributions as free-will offerings. The members of the Committee on Publication, whose names are appended to the Dedication, are Count V. M. de Calry, Lucerne; Prof. L. A. Milani, Florence; Prof. Sir Wm. M. Ramsay, Aberdeen; His Excellency Hamdy Bey, Constantinople; Prince Friedrich Wilhelm zu Ysenburg und Büdingen; E. B. Coxe, Jr., Philadelphia; Dr. Paul Carus, Editor; Prof. D. E. Smith, Columbia University; Prof. G. McClellan, M. D., Jefferson Medical College; and R. Y. Cook, Philadelphia. In order to understand the real significance of the publication of this book we can not avoid referring to the Hilprecht controversy of which we have heard much through the public prints during the last few years. A couple of years ago Professor Hilprecht was most vigorously attacked by some of his colleagues and at his request an investigation was held at the University of Pennsylvania for the purpose of educing the facts in the case. Expert witnesses were invited, some of whom, for reasons satisfactory to themselves we suppose and not difficult for us to imagine, were unable to respond. Others appeared and gave evidence *pro* and *con*. One of the jurors, especially, succeeded in making the unfortunate impression in some quarters that he was acting more or less as counsel for the defendant, an impression that could not do otherwise than detract from the value of the final judgment in the eyes of all who were so impressed. A lengthy and complete account of the examination and findings was published and distributed about two years ago. Professor Hilprecht was exonerated by the court of inquiry; and yet, it appears that the judicial decision left the matter, which was of international notice and comment among Semitists, not much clearer than it was before the investigation began. This was most unfortunate for all concerned, and not only for them, but for the good name of the science of Assyriology, one of the youngest and most difficult, yet one of the highest value culturally of the modern sciences.

The appearance of this volume in Dr. Hilprecht's honor recalls the state-

ment with which the fifth chapter of the First Book of Maccabees opens: "Now when the nations round about heard that the altar was built, and the sanctuary renewed as before, it displeased them very much." Not only are the names of Professsor Hilprecht's principal antagonists absent from the Committee on Publication and from the list of contributors, not a single name of a Semitic scholar in the United States is to be found in either, except that of Dr. Hugo Radau of Philadelphia, an excellent and independent scholar, and a devoted friend of Dr. Hilprecht. Nothing could more clearly indicate the dissatisfaction felt by the Professor's colleagues in the department of Semitics in the universities of this country with the method or findings, or with both, of the committee of investigation.

That, doubtless, has contributed to the decision of Semitic scholars on this side of the water not to join with the friends of Dr. Hilprecht on the other side in their loyal expression of appreciation of the service he has rendered in the advancement of Assyriological and archeological research—a service which has been undeniably great, and one to which the Professor has devoted himself with exceptional ardor and self-sacrificing toil, combined with ripe scholarship. Often, in his solution of difficult problems, he has shown a degree of acumen that merits recognition on all sides, and on all sides it ought to be, and, I think, it is, ungrudgingly admitted. But, in addition to their silent protest against what seemed to them the unjudicial proceedings of a university court of adjudication, Semitic scholars in this country have been influenced by their disapproval of methods which they regard as undesirable and even unbecoming in the field of scholarship. If no more serious, they have held them to be, at least, *infra dignitatem.* It has been, to a certain extent, a question of taste, but to some extent also, I think, a question of moral judgment. As regards the latter, Professor Hilprecht denied in his examination that he had at any time intentionally misrepresented any of the facts, although it appeared that statements made in some instances in his writings were liable to lead to incorrect conclusions. But that was not enough. Men forget easily that "charity covereth a multitude of sins," and that most of us cannot afford to advise that the mantle be *taboo.* We should not hesitate about the proper beneficiary of the doubt in a case involving the imputation of *moral* reprehensibility.

The question of bad taste, involved in the charges, is less serious, though in itself often very embarrassing. It is one, moreover, that ought to be judged in the light of general anthropological science and special environment. Egotism is a great fault and many a man's bane. The desire to impress others is universal. Many a man caustic in his criticism of vanity is far removed from exhibiting in his own person and utterances a genuine type of saintly or, to affirm less or more as the case may be, of gentlemanly modesty. It was a distinguished observer who wrote: "It is not only the belle who, by elaborate toilet, polished manners, and numerous accomplishments, strives to make conquests; but the scholar, the historian, the philosopher *use their acquirements to the same end.*" Herbert Spencer stated a well-known fact, and one that finds ample and sometimes humiliating verification in the conduct of the best. Men of good family may have bad manners. Kings have misused their authority, and the preachers of the Cross have been known to exaggerate, and state considerably more than the facts warranted. It is by no means a past

vice of the pulpit. Professor Hilprecht's greatest fault, perhaps, is that he is easily tempted in these points, if not in all points, like as they are. His friends have admitted that he has a lively and somewhat exuberant imagination—possibly the Professor would admit it himself were he approached in a manner conducive to subjective analysis.

Granting that there have been exaggerations, even misstatements, in the publications of the excavator of ruined cities concerning the importance of his work, have we ever inquired whether or not the *bacillus americanus* has not been one of the disturbing causes? "The biggest thing on earth" is distinctly occidental in usage and loses something of its significance if not uttered with that attractive nasality that is limited by latitude. Have we never seen university catalogues, almost too big for our waste-paper basket, coming to us with the sound of trumpets, parts of which, we have suspected, would have been placed upon the collegiate *Index expurgatorius* had there been a rigid moral censorship in existence on the campus? Support for Oriental excavations and the study of ancient Oriental literatures make little appeal to the Western mind unless big, or startling, results can be proclaimed. A few thousand tablets will not suffice—we want a whole temple library, if by any means we can have it, and we would like one "bigger" than they have in the British Museum. We would like to have a Babylonian Story of the Creation, or of the Deluge older than the one George Smith discovered in the *Kujundjik* Collection. If any one can promise us such results we can find the money to set a thousand spades at work. But if we ask for money to promote and advance Semitic studies in our universities our only reply may be the smile of ignorant wonder that men of modern times should be interested in the study. Yet, of what use would Assyrian tablets be if we had no students trained in Semitics to read and interpret them? We must be impressive in order to succeed. In addition to his naturally enthusiastic nature may it not be that Professor Hilprecht coming as a foreigner among us and, therefore, in no way immune from the germ, may have had to contend not only with the more harmless inherited Teuton *Enthusiasmus* but also with the more noxious *bacillus Americanus*? In our personal opinion Professor Hilprecht has erred in the use of the "business" advertizing method of overstating, a method, however, which has not been ignored recently by some of our educational institutions, and that is worse. We are further of the opinion that some of the gentlemen active in their opposition to Hilprecht might have found sufficiently large scope for moral reform nearer their own lecture rooms. The feud, however, has been of long standing. It goes back to the beginning of the excavations at Nippur over twenty years ago, when Peters, Hilprecht and Robert Harper were in the field. It has been more or less of a big boys' quarrel from the first, and one which should never have been allowed to attain the dimensions and publicity it has. It was from the first, and still is (for it still goes merrily on in the public prints), one to be settled in our scientific journals, or independent books or brochures, by proof and counter proof, and not by a university court which in such matters is necessarily incompetent, still less by the daily press whose reports are garbled and distorted.

It is not a matter of such immense importance whether the Temple Library was discovered or not. The question we are most interested in is, What new information have the tablets to give us concerning Babylonian civilization?

Neither is it a matter of serious importance to science whether this tablet which Dr. Peters found there is stated by Dr. Hilprecht in one of his books to have been found here. Scientific scholars are not supposed to assume the rôle of moral teachers and trainers. It is their function to refute through the appropriate media, not the columns of the newspapers, false statements of scientific fact or theory by incontrovertible evidence of the contrary. And this should be done calmly and dispassionately, with a zeal only for scientific accuracy.

On the other hand, *every scholar* should recognize the excellent virtue and enhancing as well as becoming grace of modesty. Here, as in religion, posing and *Reklame* are *anathema.*

It must be evident enough from the foregoing that the present writer is not seeking either to condone what are claimed to be scholarly irregularities or to excuse them, but merely to point to conditions among us which, perhaps, may partly help to explain them. The Hilprecht controversy has done no good. It has hurt Hilprecht for *semper aliquid haeret,* but it has not less injured his accusers, the latter perhaps more than they could anticipate. Would it not be best now for both parties to bury the hatchet and forever after keep their peace?

Whatever may be the attitude of American Semitists, one thing is certain, viz., that despite the inability of his American colleagues to join in doing him honor on this occasion, Professor Hilprecht numbers among his friends a distinguished list of names on the other side of the Atlantic. We cannot withhold from him our congratulations that he has his friends, who, whatever their private judgment may be respecting the merits of the discussion, are nevertheless sufficiently in accord to join in presenting to him this handsome attestation of their recognition of his service to Semitic science.

II.

In taking notice of the contents of the various articles contained in the book we may appropriately turn, in the first place, to the interesting contribution with which the work closes from the pen of Dr. Radau. We notice that the author continues to speak of "The Temple Library" and of "The Older Temple Library" as though the existence of a "Temple Library" had never been questioned, just as Professor Hilprecht has done in previous publications, and as he continues to do in his most recent work (*The Babylonian Expedition of the Univ. of Penn.,* Vol. V. Fasc. 1, "The Earliest Version of the Babylonian Deluge Story and *The Temple Library of Nippur*"). According to Hilprecht more than 50,000 tablets have been unearthed at Nippur by the four Babylonian expeditions of the University of Pennsylvania. In a mound named by the explorers "Tablet Hill," lying to the southwest of the temple of Enlil and separated from it by a narrow strip of land, which Professor Hilprecht thinks indicates the course of an ancient canal, approximately 22,000 tablets were discovered during the four expeditions—the vast majority of them, about 17,500, during the fourth. The sacred ground of the temple-complex in Sippar, Hilprecht points out, was similarly separated by a canal "from the territory of the city proper, where the school and temple library were situated." In a work soon to appear, *Model Texts and Exercises from the Temple School at Nippur,* Hilprecht hopes to present conclusive proof that this large mound

(Tablet Hill) covers the ruins of the Temple Library, School, and part of the archives of the older period. The view adhered to by Hilprecht's opponents is that the character of the documents found, so far as known, does not justify the claim to a discovery of a temple library. Hilprecht described them, in part, in 1896 and later, as syllabaries, letters, chronological lists, historical fragments, astronomical and religious texts, building inscriptions, votive tablets, inventories, tax lists, contracts, etc. On page 8, Vol. V, he now writes "'the large quantities of tablets of the Hammurabi period' reported by Peters, (*Nippur*, Vol. II, p. 200) to have been found in 'rooms destroyed by fire' in Tablet Hill....are for the greater part tablets of a *literary* character, not contract tablets." On page 12, *ibid.*, he writes again that about 22,000 of the more than 23,000 tablets obtained from Tablet Hill "belong to the lowest stratum, and with the exception of a few hundred tablets deal with scientific, historical, literary or religious subjects, generally written in Sumerian." It was for this reason, Professor Hilprecht adds, that he designated these ruins as the site of the older Temple Library of Nippur. A fuller description is given on pp. 14 and 15. "The tablets include lists of Cuneiform signs,....syllabaries, lists of ideograms,....lists of personal proper names,....grammatical paradigms and phrases,....geographical lists of mountains and countries, lists of gods and temples, of plants, stones and animals, of objects made of wood, leather, etc., professional names,....synonym lists of various kinds of words,....long lists of weights and of the measures of length, surface, and capacity,....lists of months,....fragments of chronological lists giving the names of the rulers of dynasties in their successive order. There are medical prescriptions,....incantations and exorcisms against evil demons,...divination texts and long lists of omina, building inscriptions, historico-religious inscriptions such as elegies, hymns, prayers and other songs....containing frequent allusions to certain kings, hostile invasions and tyrannical oppression by foreign potentates, or liturgical compositions such as New Year and harvest songs." In a footnote, p. 18, we are informed that no less than *six* volumes of Sumerian hymns and prayers addressed to Enlil, Ninib, Tammuz, Sin, Shamash and Ishtar are in course of preparation. Besides these gods, hymns and prayers are addressed to over a dozen more. Yet this, we are informed, does not give us an exhaustive statement of the various classes of scientific and literary texts, but one based solely upon an examination of only about 5000 tablets—not a quarter of the whole, among which are to be found lengthy historical inscriptions.

After reading statements like the foregoing and being in a position to verify them, in part, by the publications referred to, we must admit that they go far towards establishing the claim to a great library. If they do not prove one they go far towards establishing the possession of the principal requisites of one. We cannot make the same demands here that were met in the later and prosperous days of Assyrian rule when especially literary kings were upon the throne and the older libraries of Babylonia were searched for treasures with which to grace the royal library of an Ashurbanipal.

"The greater part of the 'Older Temple Library' has to be assigned," Dr. Radau writes, in confirmation of Hilprecht's statement in B. E., Vol., XX, p 10, "to the time of the second dynasty of Ur and the first half of the first dynasty of Isin," i. e., about 2700-2400 B. C. Some of the tablets are still older. The dates are definitely established by names of kings belonging to the

dynasties of Ur and Nisin which appear in what the author terms religio-historic texts. Whether Dr. Radau is correct in speaking of the second dynasty of Ur is not a question of importance here. Dr. Radau gives the texts, excellently autographed, transliterated and translated with notes of several Sumerian hymns, and at the end very good photographic reproductions of the tablets follow. Much may be expected from these religious compositions when the texts are all published. Th. Dangin has presented strong arguments in favor of only one dynasty of Ur, although Radau in his *Early Babylonian History* divides its rulers into four dynasties. Four specimens of hymns from this collection are given in transliteration and translation together with copious and valuable notes in which are discussed various questions of great importance to the better understanding of the early Babylonian cults and their relation to each other. The author holds that while all the more important cities of Babylonia had their own temples and ritual, these were but a copy of that of Nippur. The great god Enlil whose worship goes back to 5700 years B. C., and the Nippur trinity are declared to be the prototypes of the great gods and trinities worshiped in Ur, Isin, etc. In anticipation of his forthcoming volumes in which these Sumerian religious documents will be presented, Dr. Radau has added a selection of twenty-three hymns and prayers beautifully autographed and accompanied by half-tone photographic reproductions.

To enter into a discussion of any of the thirty remaining articles is not possible in this notice. They are all meritorious. Ed. Mahler presents a paper on "The Calendar of the Babylonians" in which he shows that the Babylonians in the earliest period of their history had a month of 30 days, while they also had a lunar month alternately of 29 and 30 days. They must, therefore, have also had an *intercalary* system by which the lunar year and solar year were equalized, and this calendrical system implies a *knowledge of astronomy*. The "Platonic number" 12,960,000, which figures in the mathematical tables, published by Hilprecht in 1906, Mahler thinks, in view of the rôle played in the Orient by the number 30, is the product of 30 divine dynasties, each 432,000 years, the period of the 10 kings who ruled from the Creation to the Deluge according to Berossus. It may, therefore, represent the number of years in a world year = 36 divine years, each = 360 divine days, each of which, according to Psalm xc. 4, is equal to 1000 years. Weissbach of Leipsic also presents an article on the calendar, to which is appended a table with the help of which a Babylonian date falling between the years 565 and 506 may be reckoned according to the Julian calendar. Evidently Mahler and Weissbach are not in agreement as to the astronomical knowledge of the early Babylonians, but the latter is a Cartesian in the matter of doubt.—Prásek, University of Prague, writes on the "Beginning of the Persian-Achæmenian Year" and concludes that the Persians adopted the Babylonian method of reckoning the 1st of Nisan as New Years' day, the time of the spring equinox. Professor Hyde of Oxford, in his *Vetaerum Persarum*, etc., 1760, held that the old Persian year began in the spring, but this view has been rejected in recent years by several scholars who place it at the autumnal equinox. A learned article of 36 pages from the pen of Dr. Ball, Oxford, author of *Light from the East*, etc., sets up and seeks to establish the thesis that Sumerian, so far from being an artificial jargon, as Halévy would have us believe, is entitled to be styled *Proto-Semitic*. Daiches, Jews' College, London, follows with a brief and instructive paper on

"Balaam—a Babylonian Barû." The importance of the study of Assyrian in connection with Old Testament study is, as so often, well illustrated in this article. Balaam was not a prophet, but a sorcerer. The story of the episode reveals Babylonian magical elements throughout.—An interesting archeological paper follows from Professor Sayce. A lamp which appears on a boundary stone of the Cassite dynasty (*cir.* 1400 B. C.) as the symbol of the god Nusku, the fire-god, has the name of the god engraven upon it. This is not only of great value in showing the significance of the symbols upon boundary stones (not astronomical, but intended to show what gods were invoked in the protection of the boundaries), but also, that the lamp of the Greeks and Romans came to them from the Babylonians. Homer knows nothing of it. The hall of Ulysses's palace was lighted by λαμπτῆρες (*lamptēres*), pans of stone or metal. Excavation has failed to produce a Greek or Roman lamp before the seventh century. But at Boghaz Keuï M. Chantre discovered in 1894 two bronze lamps of the Babylonian form. From this Hittite center in Asia Minor the lamp, like so much else, was carried by the Phrygian successors of the Hittites to the shores of the Ægean and of Thrace.—C. Fossey, Paris, contributes an article on the "Permutation of Consonants in Sumerian," which may be read with profit in connection with that of Dr. Ball.—M. de Genouillac, Paris, publishes six contract tablets of the dynasty of Ur, and A. de la Fuye discusses the succession of the *patesis* of Lagash from *Entemena* II to *Urukagina* with special reference to *Enetarzi* whom he places immediately after the former, admitting, however, that some uncertainty still exists. *Urukagina*, king of Lagash, Oppert first placed before Ur-nina, and he has been followed by Hilprecht, Radau, and generally by historians relying too much on indecisive paleographical evidence. Heuzey on the same evidence placed him after, and de la Fuye places him fifth from *Entemena*, and, following Nikolski, assigns seven years to *Enlitārzi*. —An interesting pendant to Sayce's article on the lamp as the symbol of the fire god Nusku is found in Dr. Frank's (Leipsic) paper. In it he shows that the plough, called *kankannu* from "the reed-shaped ploughshare," was the symbol of the goddess Geshtinna, the goddess of the plains, and also the scribe of the lower-world. As scribe she was also mistress of the reed (*qanû*). The name, however, can hardly be connected with the shape of the ploughshare as Levy does the Aramaic *qanqan* in his Dictionary and as Frank does here, but much more probably with the hollow receptacle, or drill, which held the grain.—Frank's *Bilder und Symbole* is quoted by Otto Weber in an additional article on "Divine Symbols" found on South-Arabian monuments. Many of these symbols have a mythological significance as in the case of the Babylonian. We question very much, however, whether the author's connection of the *Ziegenkopf* with the Babylonian dragon is correct, and especially the statement that the upper part of the latter has developed out of the harmless "house-goat, and that the South-Arabian monuments show clearly the intermediate stage in the development."—Dr. Alfred Jeremias (Leipsic) finds the key to the explanation of Urim and Thummim in Deut. xxxiii. 8 f. These are cosmic symbols of light and darkness respectively—the upper world and the lower world—the sun as ruler of the former, the moon of the latter. Everything is here reduced to ultimate cosmological-mythological material and motive, and whatever may be said unfavorably to the myth-and-motif interpretation as a universal key to the mysteries and obscurities of ancient Semitic

religion it is often able to make illuminating suggestions. This much, at least, may be predicated of this discussion of *Urim, Tummim,* and *Ephod.*

Père Scheil has almost succeeded in being humorous in searching Babylonian literature for a document recording the investiture of some one with official dignity or power—such being suitable, to his thinking, for the occasion. Under the title "*Diplomatica*" he gives, accordingly, text and translation of a small document which states that a certain Zarik is raised to the *patesi*-ship in the presence of ten witnesses; and, on the following page, a similar one recording the appointment of a minister in the name of the king. Unfortunately we learn nothing of importance from the happy idea.—Hommel (Munich) writes on the Babylonian-Assyrian "lists of planets." He several times takes issue with the interpretations and views of Père Kugler. Kugler, by the way, has recently come to the front in an astronomical way, and has denied the knowledge or cultivation of astronomy among the early Babylonians before the seventh century B. C. He has been followed by Boll, who claims that the old Babylonian *Weltanschauung* as set forth by Winckler, Alf. Jeremias and others, rests on "Greek astronomy"! Ed. Meyer, the historian, has also been so far carried adrift, apparently by Kugler's extreme pronouncements, that he has entirely lost his moorings and before the Berlin Academy of Sciences given utterance to statements some of which are wholly inexplicable, as for instance, that "the Library of Assurbanipal is *rein assyrisch, nicht babylonisch.*" Had Meyer ever read the Index of Cuneiform Ins. of W. A., or known sufficient Assyrian to read the colophons beginning *kima labirišu šatirma,* he might have been saved from following too rashly in Kugler's footprints. Kugler's latest contribution, "On the Ruins of Pan-Babylonianism," *Anthropos,* IV, 1909, sounds like too triumphant a cry to be sure of itself. In reply to that Hommel writes: "In opposition to that which is there set forth, I hold firmly that the old Chaldeans through their thousands of years of observation must have, and actually did, discover the *Praecession.*" In this volume Kugler writes on the number nine among the Babylonians, which he declares to be a sacred symbol. When a city is said to have been destroyed "nine times," that means "completely." This sacred symbolism of numbers goes back to the third millennium, to the time of Gudea in whose inscriptions the goddess Nisaba appears as the one who understands "numbers." The "seal of *Al-Ghazzali*" occurs to me in this connection with its 9 Arabic letters in 3 rows, 3 in each row, and which, when added horizontally, perpendicularly and diagonally, always give the number 15. Its original meaning is unknown, though explanations are not wanting. That the sacredness of 9 is due to its being the product of 3×3 and because 3 itself is sacred, as Kugler says, is doubtless true; but that it represents the divine power "in its completeness in overcoming an inimical power" seems to be a conclusion from the "9 times destroyed" of the text. The *3* doubtless gets its sacredness *first* from the human triad of father-mother-son, which was afterwards applied to the gods. All that was known of the gods was borrowed from human experience and observation. The *Dreiheit* (trinity) is not explained by saying that it is chiefly used of the gods, or of the deity.—Professor Kittel of Leipsic contributes a highly interesting article on "Primitive Rock Altars in Palestine," which is intended mainly to furnish by its excellent photographs of altars a supplement to his *Studien zur hebräischen Archäologie etc.,* 1908.—P. Dhorme (Jerusalem) writes on the Babylonian god *'Nin-Ib.'* Pro-

fessor Clay of the University of Pennsylvania made the discovery in 1907, in connection with his study of the Nippur Collection, that the preceding ideographic writing was read in Aramaic אנושת (*'nwsht*). Clay interpreted this as "En-Martu, lord of the West," Radau as "lord of healing," and several other scholars in other ways. Dhorme regards the *t* as feminine and reads *unash* = *urash* = the name of the god *Ib* of which *Nin-Ib* is the feminine. He identifies this *Nin-Ib* with the god *Nin-gir-su* of Lagash and gives convincing evidence in support of the identification. Myhrman's discussion of an Aramaic text, on one of the clay bowls of Nippur, remains of the Jewish settlers in Babylonia; Boissier's on presages furnished by house insects and the remaining articles are all of great interest and valuable contributions. We fear, however, that the space at our disposal will not permit us to enter into further details regarding the collection. A word or two may, however, be permitted with regard to Professor Hilprecht's recent publication, *The Earliest Version of the Babylonian Deluge Story*. The text is given in autograph and photograph, transliterated and translated. The beginnings of the lines are all broken off. The fragment reads:

1. ..... Thee(?)
2. ..... I will loosen .....
3. ..... all men together it shall sweep away(?)
4. ..... before the deluge goeth forth.
5. .....a-ni all there are, verily I shall bring, overthrow, destruction, annihilation.
6. .....a great ship build and
7. .....total height let be its structure.
8. .....It shall be a house-boat carrying the saved of life.
9. .....roof strong roof (it).
10. .....(which) thou shalt make
11. .....beasts of the field birds of heaven.
12. .....ku um mi ni
13. .....and the family
14. ..... and .....

The above is the text as it is without Professor Hilprecht's restorations. The following remarks may now be permitted. (1) The fragment is clearly a part of a Babylonian version of the Deluge. (2) With the data available it is impossible to determine its age. Neither the records of the excavations, nor the paleography, nor the linguistic forms, nor all of them together are sufficient to establish for it the age of *Rim-Sin*, or *cir.* 2100, or "surely before 2000 B. C." It is just as possible, and I think more probable, that it belongs to the Cassite period, *cir.* 1700-1130. It may, however, be a copy of a much older original. (3) Hilprecht's restoration of line 12 to ...."[and the creeping things, two of everything] instead of a number" is inadmissible, as well as his translation of "*ku um mi ni*" by "instead of a number." Judging from the photograph which, of course, is not decisive, it seems possible that *ni* may not have to be read with the *mi* at all, and that the *ku-um-mi* may form one word. There remains also the possibility of reading *um-mi-ni* = *ummāni* of the Nineveh version. But the close connection of the *ku* with the next sign and separation from what preceded is against taking it in this way, as the end of a pos-

sible *šûliku* = *šûlik*. Hilprecht's application of the meaning "number" to the Hebrew *min* cannot be justified by Hebrew or Semitic usage. (4) No inferences of any importance to Biblical study, or bearing upon the origin of the Priestly version of the Deluge Story in Genesis can be drawn from this little fragment. Nevertheless the author is to be congratulated upon the discovery of a fragment of a new Deluge Story in the Nippur Collection. It is possible that something may be added to it when the collection is thoroughly examined.

JAMES A. CRAIG.

UNIVERSITY OF MICHIGAN, June, 1910.

MATTER AND MEMORY. By *Henri Bergson*. Authorized Translation by *Nancy Margaret Paul* and *W. Scott Palmer*. London: Sonnenschein, 1911. Pp. 339. Price, 10s. 6d. net.

Henri Bergson, a member of the Institute and professor at the College of France, is broadly before the public, and he proposes a philosophy which is strongly opposed to the traditional views. He claims that science is not and ought not to be monistic, and will naturally be considered as reactionary by scientists as well as monistic thinkers. His book on *Matter and Memory* fairly characterizes the trend of Bergson's thought, and considering that fact and his significance at the present day, we will quote a number of passages which indicate both his arguments and conclusions.

He says:

"This book affirms the reality of spirit and the reality of matter, and tries to determine the relation of the one to the other by the study of a definite example, that of memory. It is, then, frankly dualistic. But, on the other hand, it deals with body and mind in such a way as, we hope, to lessen greatly, if not to overcome, the theoretical difficulties which have beset dualism.... Realism and idealism both go too far, [and] it is a mistake to reduce matter to the perception which we have of it, a mistake also to make of it a thing able to produce in us perceptions, but in itself of another nature than they. Matter, in our view, is an aggregate of 'images.' And by 'image' we mean a certain existence which is more than that which the idealist calls a *representation*, but less that which the realist calls a *thing*,—an existence placed half-way between the 'thing' and the 'representation.'"

Bergson's idea of matter differs from common usage as is seen from the following quotation:

"Pure perception, which is the lowest degree of mind,—mind without memory—is really part of matter, as we understand matter. We may go further: memory does not intervene as a function of which matter has no presentiment and which it does not imitate in its own way."

The argument of the whole book hinges upon an explanation of memory as distinguished from perception. Between the two is the function of sensory image. On page 170 he says:

"Perception is never a mere contact of the mind with the object present; it is impregnated with memory-images which complete it as they interpret it. The memory-image, in its turn, partakes of the 'pure memory,' which it begins to materialize, and of the perception in which it tends to embody itself:

regarded from the latter point of view, it might be defined as a nascent perception. Lastly, pure memory, though independent in theory, manifests itself as a rule only in the colored and living image which reveals it."

The difference between Bergson's view and other interpretations appears best in his explanation of attention and the act of cognition, which is greatly helped by memory. He says:

"Attentive perception is often represented as a series of processes which make their way in single file; the object exciting sensations, the sensations causing ideas to start up before them, each idea setting in motion, one in front of the other, points more and more remote of the intellectual mass. Thus there is supposed to be a rectilinear process, by which the mind goes further and further from the object, never to return to it. We maintian, on the contrary, that reflective perception is a *circuit*, in which all the elements, including the perceived object itself, hold each other in a state of mutual tension as in an electric circuit, so that no disturbance starting from the object can stop on its way and remain in the depths of the mind: it must always find its way back to the object whence it proceeds. Now, it must not be thought that this is a mere matter of words. We have here two radically different conceptions of the intellectual process. According to the first, things happen mechanically, and by a merely accidental series of successive additions.... In the second, on the contrary, an act of attention implies such a solidarity between the mind and its object, it is a circuit so well closed, that we cannot pass to states of higher concentration without creating, whole and entire, so many new circuits which envelop the first and have nothing in common between them but the perceived object....Memory, capable, by reason of its elasticity, of expanding more and more, reflects upon the object a growing number of suggested images,—sometimes the details of the object itself, sometimes concomitant details which may throw light upon it. Thus, after having rebuilt the object perceived, as an independent whole, we reassemble, together with it, the more and more distant conditions with which it forms one system."

His theory of spirit may briefly be described in a passage on pages 312 to 313:

"As long as we confine ourselves to sensation and to pure perception, we can hardly be said to be dealing with the spirit. No doubt we demonstrate, as against the theory of an epiphenomenal consciousness, that no cerebral state is the equivalent of a perception. No doubt the choice of perceptions from among images in general is the effect of a discernment which foreshadows spirit. No doubt also the material universe itself, defined as the totality of images, is a kind of consciousness, a consciousness in which everything compensates and neutralizes everything else, a consciousness of which all the potential parts, balancing each other by a reaction which is always equal to the action, reciprocally hinder each other from standing out. But to touch the reality of spirit we must place ourselves at the point where an individual consciousness, continuing and retaining the past in a present enriched by it, thus escapes the law of necessity, the law which ordains that the past shall ever follow itself in a present which merely repeats it in another form, and that all things shall ever be flowing away. When we pass from pure perception to memory, we definitely abandon matter for spirit."

He distinguishes between pure perception and remembrance, stating that in the former the perceived object is present. It is a body which modifies our own, while the latter is a representation of an absent object, and there are two hypotheses with opposite consequences. Professor Bergson says:

"If, in the case of a present object, a state of our body is thought sufficient to create the representation of the object, still more must it be thought so in the case of an object that is represented though absent. It is necessary therefore, on this theory, that the remembrance should arise from the attenuated repetition of the cerebral phenomenon which occasioned the primary perception, and should consist simply in a perception weakened. Whence this double thesis: Memory is only a function of the brain, and there is only a difference of intensity between perception and recollection."

The opposite of this hypothesis reads thus:

"Memory is something other than a function of the brain, and there is not merely a difference of degree, but of kind, between perception and recollection."

Professor Bergson is opposed to the mechanical theory of life, and he thinks that memory does not depend on the brain. He opposes the theory of parallelism, and refutes it by the following argument:

"That there is a close connection between a state of consciousness and the brain we do not dispute. But there is also a close connection between a coat and the nail on which it hangs, for, if the nail is pulled out, the coat falls to the ground. Shall we say, then, that the shape of the nail gives us the shape of the coat, or in any way corresponds to it? No more are we entitled to conclude, because the physical fact is hung on to a cerebral state, that there is any parallelism between the two series psychical and physiological." K

LES ROCHES ET LEURS ÉLÉMENTS MINÉRALOGIQUES. Par *Ed. Jannettaz*. Paris: A. Hermann, 1910. Pp. 704. With twenty colored and eight uncolored plates, 322 figures and 2 geological maps. Price, 8 fr.

Geology is one of the most interesting of the sciences and, as the author of the volume before us says in his preface, the necessity of the knowledge of the elements which make up the crust of the earth, is evident not only to chemists, geologists, and miners who are directly interested in it, but even to the sculptor who is in search of a fine statuary marble, to the architect who should familiarize himself first with the constitution of the soil upon which he builds and then with that of the materials in the construction and adornment of buildings, and finally to the agriculturist who must not be in ignorance of the quality of the arable lands to which he entrusts his seed.

M. Jannettaz is a lecturer at the Sorbonne and is connected with the museum of that institution. He has here undertaken to give a complete treatise on the entire subject of rocks that will prove satisfactory to those who wish to enter upon the study.

The book is divided into three parts. The first may be regarded as an elementary treatise on physical chrystallography; the second on a compendium of mineralogy, and the third is devoted to a description of rocks. In an appendix is given the method of determining rocks, also tables of the characteristics of their elements, a chronological list of eruptive and sedimentary rocks, and a bibliography. P

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THE MONIST

ON THE MNEMONIC ORIGIN AND NATURE OF AFFECTIVE TENDENCIES.[1]

I.

IF we observe the behavior of the various organisms from the unicellular up to man, we see that a large number of their processes, and especially the most important ones, may be regarded as manifestations of a tendency of the organism to maintain or to restore its "stationary" physiological state (to use the term of Ostwald's energetics).

In other words, if we call "affective" that particular class of organic tendencies which appear subjectively in man as "desires" or "appetites" or "needs" and objectively in both man and animals as "movements" completed or incipient (except those that have become mechanical in character), then a large number of the principal "affective tendencies" thus defined may be at once reduced to the single fundamental tendency of each organism to preserve its "physiological invariability."

For instance, we see that hunger, the most fundamental of all affective tendencies, is in reality nothing but the tendency to keep, or restore that qualitative and quantitative condition of the nutritive system of the body which will make possible a continuation of the stationary metabolic state. This tendency of an organism towards the invariability of its own metabolism has become, in the course of its phyletic evolution, an inherent propensity to pass

[1] Translated for *The Monist*.

through all the temporary physiological states that could re-establish this necessary condition within it, hence, a tendency to perform all movements that have nourishment for their object; yet in doing this it has never relinquished its original character. This results directly from the fact that all inclination to procure new food ceases as soon as the internal nutritive system of the animal has attained its normal state.

Accordingly, the hydra or sea anemone does not react positively to food except when its metabolism reaches a state requiring more nutriment, "unless," says Jennings, "metabolism is in such a state as to require more material"; for instance, when the large sea anemone *Stoichactis helianthus* does not experience a sensation of hunger, a bit of food placed upon its disk occasions the same characteristic "rejecting reaction" as if it were any other disturbing object. And all other organisms, the higher as well as the lower, behave in exactly the same fashion.[2]

Schiff's experiments of injecting nutritive substances into the veins of dogs are direct evidence, on the other hand, that the fundamental condition of hunger is the absence of histogenetic substances in the blood, for these injections resulted not only in nourishing the animal but also in allaying its hunger.

Moreover the fact that hunger, especially as long as it is only moderate, assumes in man the form of a particular localized sensation originating in the wall of the stomach and being the sole cause of the activities induced by real hunger, is—it is scarcely necessary to state—a natural consequence and of but secondary importance. It is only one of many forms in which we see the *substitution of the part for the whole,* and this characteristic phenomenon of all mnemonic physiological processes is true also for the

[2] H. S. Jennings, *Behavior of Lower Organisms,* pp. 202, 205, etc. New York, MacMillan, 1906.

tendency to physiological invariability, which is also essentially mnemonic as we shall see more clearly later on. These peculiar sensations localized in the gastric mucous membrane and produced by its swelling or by some other more or less similar change caused by the empty condition of the stomach, usually take place before or simultaneously with the actual lack of histogenetic substance in the blood, and so finally became representative or vicarious signs of hunger.

The same is true of thirst and of its localization in the upper part of the alimentary canal.

We might pass on from hunger and thirst to the other more or less fundamental organic "appetites" or "needs." All would show us in their different manifestations that they are all directed simply and solely toward the restoration of the stationary physiological state, which has been lost or in some way disturbed.

Thus there exists for every animal species an *optimum* of environment with reference to the degree of saturation of the solution in which the animal lives, to the temperature or to the intensity of light, etc., above and below which the organism cannot maintain its normal physiological state and which the animal makes every effort to maintain.

So for instance we see that the infusorium *Paramaecium* at 28° C. reacts negatively to a rising but not to a falling temperature, whereas at 22° C. it reacts negatively to a falling but not to a rising temperature. We see also that the *Euglena* in a moderate light reacts negatively to a decrease but not to an increase in the intensity of light, whereas in a stronger light the reaction is exactly reversed.[3]

The tendency of organisms to invariability in their

[3] Jennings, *Behavior of Lower Organisms*, pp. 294-295.

stationary physiological state consequently resolves itself into a tendency to invariability in their external and internal environments. Thus for instance, oysters and actinians close when exposed to the air; that is, they behave so as to keep the standard of moisture unaltered within themselves and in their immediate surroundings.[4]

To the invariability of environment is due also the position which the organism takes with relation to the direction of the various forces to which it is exposed, especially gravity. Hence the tendency to preserve or restore its normal position. Thus, for instance, the ameba draws in its pseudopodia when they come in contact with solid non-edible bodies; but if it is lifted off the bottom of the aquarium and is suspended in the water it stretches out its pseudopodia in all directions. As soon as one of these touches a solid object, the ameba takes hold of it, draws its body over to it, and again resumes its original position. Likewise a starfish when inverted tries to turn over, that is, to return to its normal environmental conditions with relation to gravity.[5]

All "needs" to throw off substances which have been produced by the general metabolism and which the organism can no longer use, are likewise no exceptions to this general rule. For, although the need for eliminating them may be called forth by certain vicarious local sensations capable of evoking the act of expulsion in advance, yet in reality, whether in the case of the smallest and simplest infusorium or of the most highly developed vertebrates, it is due only to the circumstance that the accumulation of this waste material within the organism would eventually disturb its normal physiological state.

To this class of eliminative affective tendencies the sexual hunger seems to belong. For we know that certain

[4] H. Piéron, *L'évolution de la mémoire*, pp. 29, 74. Paris, Flammarion, 1910.

[5] K. C. Schneider, *Vorlesungen über Tierpsychologie*, pp. 5, 57. Leipsic, Engelmann, 1909.

recent theories are inclined to assign the whole organism rather than any one definite part of the body as the seat of sexual hunger just as in the case of hunger proper, and at the same time to regard it as due to the need of eliminating the germinal substance.[6]

It may be that just as infusoria after a certain number of bipartitions become subject to "senescence" (Maupas) so also the germinal substance constantly produced in the adult organism, especially when it has undergone the reducing divisions, may be subject to a similar degeneration if it has not also experienced the requisite caryogamic rejuvenation. Therefore it seems quite plausible that "sexual hunger" is originally nothing but the tendency of the organism to free itself of this "senile corruption" which the germinal substance, being in its nature a nuclear substance awaiting fertilization, produces by means of its hormonic secretions, or substances of disintegration, and spreads throughout the entire organism.

The more or less brilliant or striking "wedding garment" which nearly all animals assume when in love, arises from an abnormal condition of general hypersecretion occasioned again by the hormonic products of the germinal substance. At any rate it shows how deep is the physiological disturbance caused in all somatic cells by the germinal substance. The effort to expel so disturbing an element then becomes a tendency to copulation as means of effecting this expulsion. Hence the fundamentally selfish character (*nature foncièrement égoïste*) of sexual love which Ribot rightly emphasizes: "In the immense majority of animals, and frequently in men, the sexual instinct is not accompanied by any tender emotion. The act once accomplished, there is separation and oblivion."[7]

[6] See, for instance, though only in certain respects, J. Roux, *L'instinct d'amour*, ch. I, "Base organique de l'instinct sexuel." Paris, Baillière, 1904.

[7] Th. Ribot, *La psychologie des sentiments*, p. 258. Paris, Alcan, 1908

It still remains to explain why copulation of the sexes is the only means of eliminating the germinal substance, whereas the single individual is sufficient for the removal of all other more or less similar waste matter.

It is easy to suppose that the reason lies in the peculiar nature of the substance itself, and there are two circumstances that may perhaps, if considered together, contribute a little to the desired explanation: First, the attraction exerted at a distance by the ovum on the spermatozoid by means of secretions diffused in all directions; and second, the fact that hermaphroditism probably preceded sexual dimorphism in the phylogeny of pluricellular organisms. Still we cannot conceal the fact that the phylogenetic process, which by this elimination has become so closely associated with copulation, is still far from a satisfactory explanation.

But even in this incomplete form the hypothesis which attributes to the sexual instinct no further significance than a tendency to eliminate a disturbing element, permits us to present this instinct in very different light from that in which it has hitherto appeared. For were this hypothesis to be accepted, the sexual instinct would not have originated and developed for the "good" of the species, but of the individual. It would therefore not represent the "will of the species" imposing itself upon the individual, as most people now maintain with Schopenhauer, but much rather would it mean here as always the "will" of the single individual; that is, the usual tendency to keep unchanged its stationary physiological condition. And instead of seeing in it with Weismann and all neo-Darwinists a new evidence of the alleged omnipotence of natural selection, Lamarck's principle of individual adaptation combined with the in-

(English translation in Contemporary Science Series, London, 1911, p. 253). —*Essai sur les passions*, pp. 67 ff. Paris, Alcan, 1907.

heritance of acquired characters would be sufficient to account for this as well as for all other instincts.

Moreover, the "elimination" hypothesis is sufficient by itself to explain certain peculiarities of this impulse which would be quite incomprehensible from the standpoint of Schopenhauer and the neo-Darwinians.

Ribot, for instance, is surprised that an instinct which is so exceedingly important for the continuance of the species is so often exposed to certain perversions which seem to involve its complete negation.[8]

The fact that such perversions are common accords poorly with the hypothesis that the only reason for the existence of such an instinct is the need for the continuance of the race.

Finally, the fact that both animals and man now desire copulation or even certain secondary sexual relations for their own sakes—hence independently of the act of the elimination of the germinal substance, perhaps even in default of any to eliminate,—this also, as we shall better appreciate later on, is only the consequence of the mnemonic law already mentioned of the substitution of the part for the whole, and of its derivative, the law of the transference of affective tendencies. According to this law all phenomena that constantly accompany the satisfaction of certain affectivities become also in their turn objects of desire, and all habits acquired for the satisfaction or in the satisfaction of certain affectivities likewise become affective tendencies.

If the sexual instinct also, on account of its origin, can be referred to the class of tendencies which serve to maintain the stationary physiological condition of the organism, then the above law is open to no exception as far as the fundamental organic tendencies are concerned. Hence we can sum it up in the following words:

[8] Ribot, *La psych. des Sent.*, pp. 263, 265 (Engl. ed., pp. 257, 259).

Every organism is a physiological system in a stationary condition and tends to preserve this condiiton or to restore it as soon as it is disturbed by any variation occurring within or without the organism. This property constitutes the foundation and essence of all "needs", of all "desires," of all the most important organic "appetites." All movements of approach or withdrawal, of attack or flight, of taking or rejecting which animals make are only so many direct or indirect consequences of this perfectly general tendency of every stationary physiological condition to remain constant. We shall soon see that this tendency in its turn is only the direct result of the mnemonic faculty characteristic of all living matter.

This single physiological tendency of a general kind, accordingly, is sufficient to give rise to a large number of the most diversified particular affective tendencies. Thus every cause of disturbance will produce a corresponding tendency to repulsion with special characteristics determined by the kind of disturbance, by its strength, and by the measures capable of avoiding the disturbing elements; and for every incidental means of preserving or restoring the normal physiological condition, there will be a quite definite corresponding tendency such as "longing," "desire," "attraction" and so forth.

Even the instinct of self-preservation—when understood in the usual narrow sense of "preservation of one's own life"—is only a particular derivative and direct consequence of this very general tendency to preserve physiological invariability. For every condition which would eventually lead to death first presents itself as a mere disturbance, and it is only as such that the animal tries and learns to avoid it. Jenning's ameba, for instance, which had been completely swallowed by another ameba, but had succeeded in getting away, did not in all probability flee from a phenomenon that endangered its life, but from a

condition in its environment which even though a profound disturbance, was nevertheless nothing but a disturbance.

It is well known that Quinton was the first to develop a theory that organisms tend to maintain in their internal intercellular environment the same chemical and physical conditions that obtained in the primordial environment when life first appeared on earth.[9]

But it is easily seen that our theory is limited to a consideration of the tendency to invariability only so far as it manifests itself each moment by the behavior of each individual. Therefore instead of serving as a far too one-sided starting point for the explanation of the evolution of species it forms the basis upon which all the most important affective tendencies of the animal world may be built up.

As a factor of invariability for the individual, this tendency to preserve its stationary physiological condition is indeed one of the most important factors in the variation and progress of the species, but in quite a different way from that pointed out by Quinton. For from this tendency arose and developed the power of motion which is the greatest difference between plants and animals, and with which also has kept pace the development and perfection of the whole motor apparatus, including that of the nerves and senses, which plays so important a part in determining the characteristics which distinguish the different zoological species.

Finally as a factor of individual invariability it has proved by its effect on man to be one of the most conspicuous factors in all social evolution, for we may well say that technical inventions and industrial products from the first cave dwellings, the first skins used for clothing, the first discovery of fire to the most complex attainments of to-day have tended constantly more or less, directly or indirectly,

[9] R. Quinton, *L'eau de mer, milieu organique.* Especially Book II, "Loi générale de constance originelle," pp. 429-456. Paris, Masson, 1904.

towards one single goal, namely the artificial maintenance of the greatest possible constancy in the environment, which is the necessary and sufficient condition for preserving physiological invariability.

II.

Closely connected with this inherent fundamental property of every organism to strive to preserve its normal physiological condition or to restore it as soon as it is disturbed, is still another attribute which in its turn becomes the source of new affectivities.

For as soon as the previous stationary condition cannot be restored by any means, that is by any movements or change of location, the organism disposes itself in a new stationary condition consistent with its new external and internal environment. In this way there originate a large number of new phenomena called "adaptations."

Thus, for instance, Dallinger's classical experiments on the acclimatization of lower organisms—suggested by the observation that a mass of organisms usually living in water of a normal temperature, also live and flourish in the hottest spring,—have proved that infusoria may gradually become accustomed to a constantly higher temperature so that finally after years of continuous slow increase in the degree of heat they can stand a temperature so high that any other individual not acclimated would certainly die if subjected to it. It is likewise known that the same species of protozoa are found in both fresh and salt water, and that it is possible to accustom fresh-water amebas and infusoria to a salt habitat which would have killed them at the start,—and there are more instances of the same kind.[10]

[10] See C. B. Davenport and W. E. Castle, "On the Acclimatisation of Organisms to High Temperatures."—*Archiv für. Entw.-Mech. der Organismen*, II, 2. Heft, July, 1895.—C. B. Davenport and R. V. Neal, "On the Acclimatisation of Organisms to Poisonous Chemical Substances," *loc. cit.*, II, 4. Heft, Jan. 1896.

One feature of special interest to us is the fact that the new conditions of the environment to which the animal gradually becomes accustomed tend in time to become his *optimum*. "This individual adaptation (e. g., to a different proportion of salt) is affected in accordance with the rule that the conditions of density under which an individual is living, tend to become in time the *optimum* conditions for that individual."[11]

This may be observed even in plant organisms. *Plasmodia* of the Myxomycetes die when plunged suddenly into 1 or 2% glucose solutions, and even draw back from ½ or ¼% solutions, and yet they may gradually become accustomed to 2% solutions so that they finally show by their behavior that they prefer their new environment to the original one without glucose.[12]

The diatom *Navicula brevis* ordinarily shuns even the weakest light and tries to hide itself in the darkest part of the drop of water in which it is being observed. However, if a culture is placed in the bright light of a window for two weeks, it exhibits exactly the opposite tendency and makes for the brightest part of the drop as soon as it is removed again to its former position in a weak light.[13]

The common actinia (*Actinia equina*) often found clinging to rocks in all possible positions with relation to the force of gravity, sometimes with the axis of the body directed upward, sometimes downward and sometimes to one side, seems to become so accustomed to its position that it tries to assume the same one when removed to another spot. For instance, if several actinians found in various positions are collected and placed in an aquarium, "they

[11] Davenport and Castle, *op. cit.*, p. 241.

[12] E. Stahl, "Zur Biologie der Myxomyceten," *Bot. Zeit.*, Mar. 7, 14 and 21, 1884, p. 166.

[13] Davenport and Castle, *op. cit.*, p. 246.

show in attaching themselves a distinct tendency to assume the same position they had formerly held."[14]

We might bring forward innumerable other examples but are here chiefly concerned with pointing out their significance. They show that the new physiological state arising from adaptation to the new environment, when once it has supervened and has existed a certain time within the organism, tends thereafter to preserve or restore itself. This tendency of a past physiological state to remanifest or reproduce itself is nothing but the tendency inherent in every mnemonic accumulation to "evoke" itself again. Hence it is a tendency of a purely mnemonic nature.

From this then it follows directly that the tendency to physiological invariability from which originate, as we have seen, the most important organic affective tendencies of all organisms must be equally mnemonic in nature. For if according to the above-mentioned examples an entirely new and recent physiological state is nevertheless able to leave behind a mnemonic accumulation producing a distinct tendency to its own restoration, it is easy to understand that just because the normal physiological state has lasted so much longer it must possess a correspondingly stronger mnemonic tendency toward its restoration whenever it is disturbed.

This then implies that each of the innumerable different elementary physiological states, of which each is effective at one definite point of the organism and all combined constitute the general physiological state, possesses the faculty of depositing independently a "specific accumulation" from all indications similar to that deposited in the brain by each of the nervous currents which make up the different sensations and leave behind a mnemonic residue capable of being reactivated or revived. By "specific accumulations" of the various nervous currents we mean here only that

[14] Piéron, *op. cit.*, p. 144.

every accumulation is capable of giving as discharge only that particular specificity of the nervous current by which this accumulation has itself been deposited.

The extension of this faculty of "specific accumulation" to all physiological phenomena in general accords with the hypothesis that nervous energy is the basis for all the phenomena of life. If in the psycho-mnemonic phenomena properly so called the action of nervous energy produced by "discharge" or by stimulation of the respective center appears in the foreground, whereas the specific physico-chemical phenomena accompanying the discharge remain in the background so that until recently they were quite overlooked, it would be—according to the fundamental concept of Claude Bernard on the essential identity of all the different forms of irritability of living matter—a difference of degree only but not of essence, inasmuch as true physiological phenomena accompanying the respective stimulation (muscular contraction, glandular secretion, etc.) appear with greater distinctness, whereas the specific nervous phenomena which likewise accompany this physiological activity are less perceptible. In this way we have tried to explain the fundamental mnemonic property of all living substance which has recently been especially emphasized by Hering, Semon and Francis Darwin, and also to explain the most essential and significant biological phenomena proceeding from it either directly or indirectly.[15]

By this extension of the mnemonic faculty to all elementary physiological phenomena we now obtain a somatic or visceral theory of the fundamental affective tendencies in the sense that the tendency toward physiological in-

[15] Eugenio Rignano, *Ueber die Vererbung erworbener Eigenschaften*, Leipsic, Engelmann, 1907. (English translation by Basil Harvey in preparation, Open Court Publishing Co. French edition, Paris, Alcan, 1906; Italian edition, Bologna, Zanichelli, 1907). See especially the chapter on "The Phenomena of Memory and the Vital Phenomena." See also "Die Zentroepigenese und die nervöse Natur der Lebenserscheinung," *Zeitschr. f. d. Ausbau d. Entwicklungslehre*, II, 1909, Heft 8-9.—"Das biologische Gedächtnis in der Energetik," *Annalen der Naturphilosophie*, VIII, and *Scientia*, XI, 3, 1909.

variability or toward the restoration of this or that previous physiological state corresponding to this or that previous environment, depends on innumerable elementary specific accumulations, differing from point to point of the body and whose combined potential energy would form as it were a "force of gravitation" toward that environment or those conditions which make possible the preservation or restoration of the combined physiological system represented by all these elementary accumulations.

Naturally in organisms supplied with nervous systems there would arise and be gradually developed side by side in cooperation with, and often as a substitute for, every one of these affective tendencies of purely somatic origin and seat, the affective tendency represented by the corresponding mnemonic accumulations which had been deposited in that particular zone of the nervous system directly connected with the respective points of the body. In man, for instance, this zone would be Flechsig's *Körperfühlsphäre* to which in certain cases may also be added the frontal zone.[16]

Now after the cerebral mnemonic accumulations had arisen phylogenetically under direct somatic action, they would finally have become able to represent by themselves, after all connection with the body had been severed, those former affective tendencies to which they owed their origin. And indeed this is true because of the two fundamental mnemonic laws of (1) the gradual independence of the part with reference to the whole and (2) the substitution of the part for the whole, which arise directly from the fact that every elementary specific accumulation when once deposited is capable of an independent existence. Therefore Sherrington's "spinal" dog, for instance, continued to experience the same repugnance to the flesh of other dogs,

[16] P. Flechsig, *Gehirn und Seele*, pp. 19, 21-22, 92, 99-100. Leipsic, Veit, 1896.

to exhibit other similar affectivities and even the same emotions as the normal dog, though all of them are undoubtedly of phyletic somatic origin.[17]

But this cooperation and this possibility of an eventual substitution of the affective tendency whose seat is in the brain, for the corresponding affective tendency of somatic origin, does not prevent the former from being entirely in the control of the latter. Therefore modern psychology generally admits that the affective life "has its cause below in the variations of the cenesthesia, which is itself a resultant, a combination of vital operations."[18]

Nor does it in the least prevent affective tendencies from keeping all the fundamental properties which they owe to their mnemonic visceral origin, of which the most important are first the possession of a "diffuse" seat, and secondly that they are eminently "subjective."

For every stationary physiological system in equilibrium with regard to its environment permeates the whole organism and consequently also all that part of the brain in which this organism is reflected. Accordingly, in contrast to the mnemonic sense-accumulations each of which to all appearances has a seat distinctly localized at a single point or in a single center of the cortex of the brain, we have every reason to conclude that each affective tendency is made up of an infinitely large number of different elementary mnemonic accumulations, deposited respectively in every point of the body and in every corresponding point in the brain.

To this mnemonic physiological origin of the affective tendencies is also due their eminently "subjective" character; for the organism is equipped potentially with this

[17] See C. S. Sherrington, *The Integrative Action of the Nervous System*, pp. 260-265. London, Constable, 1906. Cf. the pertinent discussion of these experiments by Lloyd Morgan, *Animal Behaviour*, 2d ed., p. 292, London, Arnold, 1908; and Revault d'Allonnes, *Les inclinations*, pp. 101 ff., Paris, Alcan, 1908.

[18] Ribot, *Psych. des sent.*, p. 10.

or that "idiosyncratic" affective tendency, with this or that "appetite," according to the various environments or conditions in which the species and the individual were placed for a longer or shorter time in the past, in other words according to their *individual history*.

Hence the subjectivity and infinite variety manifest in the needs, the appetites and desires and consequently in everything that furnishes an object of "affective evaluation."

III.

The hypothesis here presented of the mnemonic nature of all affective tendencies in general is further confirmed by other examples of more special affectivities which have also originated by way of "habit" and yet bear special relations to the environment since they refer only to one part or another of the organism and manifest an activity only periodically or intermittently. They are especially in evidence in the higher animals and in man most of all.

As a typical instance it will be sufficient to consider maternal love.

Evidently the habit of having certain relations of parasitism, or of symbiosis in general, with the progeny throughout a long series of generations has become gradually transformed in a mnemonic way into affective tendencies towards these relations.

"Comparative ethology," says Giard, "shows us most clearly that the relations between the parent organism and its progeny are in principle absolutely the same as those existing between a parasite and the animal it lives upon, and that after a period of unstable equilibrium in which one or other of the two connected organisms suffers to the advantage of its companion there is a tendency to the

establishment of a definite position of mutual (*mutualiste*) equilibrium."[19]

This is true for instance of the relations of internal incubation, which though first sought and effected by the embryo itself in some phase of its development for the purpose of nutrition or some other advantage, and at first simply endured by one of the parents, either father or mother, finally become actual "needs" to this parent.

It is likewise true of the relations of external incubation (brooding) which arise at first as the result of some particular circumstance and in this way become a habit. For instance the attachment manifested by the female spider *Chiracanthium carnifex* for her nest, whether it be her own or one of which she has taken possession, grows *with time,* that is with the length of her occupation of it. Hence "mother love" seems in her case to be really nothing but her attachment to a home to which she has become accustomed.[20]

It is just the same with the brooding of birds and some reptiles which owes its origin to the pleasant sensation which the contact with the fresh eggs brings to the feverish condition accompanying the egg-laying process, but which by habit has become in itself an instinctive inclination.[21]

Finally as regards lactation the young have gradually developed secretions in the lactiferous glands by sucking the secretions of the perspiratory glands on the breast of the mother brooding over them, and thus they have at the same time so accustomed the mother to this process that lactation finally becomes an actual need for her. "With mammals we must look for the origin of the mutually symbiotic relations which unite mother and child in the phe-

[19] A. Giard, "Les origines de l'amour maternel," *Revue des idées,* April 15, 1905, p. 256.

[20] A. Lécaillon, "Sur la biologie et la psychologie d'une araignée," *Année psychologique,* Année 10e, pp. 63-83. Paris, Nasson, 1904.

[21] Giard, *op. cit.,* p. 266.

nomenon of lactation. The physiological disorders of pregnancy and parturition lead, among other very curious trophic effects, to an excessive secretion of the mammary glands which, as we know, are only a special localization of the sebaceous glands of the skin. The young animal in thus taking its first nourishment alleviates the discomfort of the female and thus becomes a means toward the comfort of its mother."[22]

That the need for lactation is the origin of maternal love is shown by the fact that the mother who is deprived of her young tries to replace them by foster-nurslings. "The necessity of getting rid of a troublesome secretion is powerful enough sometimes to cause the female that lost her young to steal the progeny of another, and these robberies have been performed even by females that were still suckling their own young, the satisfaction of a need leading them, as is generally the case, to seek a still greater satisfaction which might lead even to excess."[23]

In the cases observed by Lloyd Morgan, this need of the mother takes the form of a mother love solicitous for the nourishment of her young, and it is possible that it may actually represent to them the beginning of an unselfish attachment. "Further, I have seen both bitches and cats get up and again lie down so as to bring the teats into closer proximity to the mouth of any young which failed to find them. It has been noticed by a man who is a remarkably good observer and has had much to do with animals, and also by myself, that when a lamb is weakly and fails to find the teat, the mother not infrequently uses its shoulders, head and neck as a lever to place the lamb on its legs; and, having accomplished this, straddles over the lamb, and brings the teats against its lips; and these efforts are continued until the little animal sucks."[24]

[22] Giard, *op. cit.*, pp. 269-270.
[23] Giard, *loc. cit.*, p. 270.
[24] Lloyd Morgan, *Habit and Instinct*, p. 115, New York, Arnold, 1896.

This example is very significant for it shows clearly how the necessity for the elimination of the milk must end in arousing an attachment for the nursling as the customary means for attaining this end, just as we have seen that the need for the elimination of the germinal substance must lead to an affectivity for the other sex, here again as the customary means to effect this elimination.

Just as "sexual attraction" ceases after the elimination of the germinal substance, so also does "mother love" disappear as soon as the need for lactation is no longer felt. "Maternal affection does not generally survive the causes which produced it and only vague traces of it are noticeable after lactation has ceased."[25]

Finally, the fact that the mother's affection is stronger than that of the father, and that the parents' love for their children is stronger than that of the children for their parents confirms the hypothesis that all these affectivities have arisen exclusively by way of habit, for it shows that affection for those with whom we have certain relations is the more intense the more numerous and prolonged these relations are. "Among animals as a whole," remarks Ribot, "paternal love is rare and inconstant and among the lower representatives of mankind it is a feeble sentiment and forms but a slight bond."[26] Paternal love exists only where the union of the sexes is close, that is, where the communal life "creates a current of affection because of services rendered."[27]

"Every one recognizes," says Pillon in his turn, "that the love of parents for their children exceeds in intensity the children's love for the parents, and that of the two parents it is the mother whose love is stronger for her child. . . . The reason is that in the mother's case much

[25] Giard, *op. cit.*, p. 273.

[26] Ribot, *Psych. des sent.*, 285.

[27] Ribot, *Psychol. des sent.*, p. 286.

more than with the father the love for the child is nourished and stimulated, because of her special functions, that is, by the constant performance of the actions it dictates."[28]

But mother-love, and mutual love within the family in general, owing its origin to certain relations grown into habit, represents only one particular case of a universal law. For every other relation to person or things (no matter how special) which becomes in the slightest degree a habit finally appears for this very reason as something "desired." In every environmental relation whether general or particular is verified Lehmann's law of the "indispensability of the customary," which this investigator established for every stimulus to which one becomes accustomed and whose cessation arouses a need for its presence.[29]

"I have a small clock in my room," a friend once wrote to G. E. Müller, "which will not run quite twenty-four hours with one winding. It often happens therefore that it stops. Whenever this occurs I notice it at once, whereas of course I do not hear it at all when it is running. The first time this occurred the sensation was somewhat as follows: it happened that I was suddenly aware of a very indefinite unrest, a sort of emptiness without being able to say just what the matter was. Not until after some reflection did I discover the cause in the stopping of my clock."[30]

Moreover each of us has doubtless had opportunity to observe how things which are disagreeable at first finally become attractive from custom, and how such habits assumed in the course of man's life become as peremptory "needs" as those which we call natural needs. "Smokers, snuff-takers, and those who chew tobacco, furnish familiar

[28] F. Pillon, "Sur la mémoire et l'imagination affective," *Année philosophique*, XVII, 1903, pp. 69-70. Paris, Alcan, 1907.

[29] A. Lehmann, *Die Hauptgesetze des menschlichen Gefühlslebens*, pp. 194 ff. Leipsic, Reisland, 1892.

[30] G. E. Müller, *Zur Theorie der sinnlichen Aufmerksamkeit*, p. 128, Leipsic, Edelmann.

instances of the way in which long persistence in a sensation not originally pleasurable, makes it pleasurable—the sensation itself remaining unchanged. The like happens with various foods and drinks, which, at first distasteful, are afterwards greatly relished if frequently taken."[31]

Thence arises the hankering after certain customary things which we suddenly miss: "In some animals there is produced a condition resembling nostalgia, expressing itself in a violent desire to return to former haunts, or in a pining away resulting from the absence of accustomed persons and things."[32]

Mere habit, therefore, is enough, as we have seen in the case of family love, to cause other similar affectivities also to originate and take root. Such are gregariousness, sociability, friendship, and the like: "The perception of kindred beings, perpetually seen, heard, and smelt, will come to form a predominant part of consciousness—so predominant a part that absence of it will inevitably cause discomfort."[33]

Finally we are all well aware of the powerful influence of the habits of life current in any family circle during the earliest years of a child's life—"nurture" in its broad sense, as Galton would say—because from these habits arise and grow the feelings and moral tendencies which remain impressed upon the whole life as though they were "innate."[34]

In short from these few instances adduced simply in explanation of our position, we see how profound is the truth contained in the saying that habit is a "second nature."

[31] Herbert Spencer, *The Principles of Psychology*, 4th ed., I, 287. London, Williams and Norgate, 1899.

[32] Th. Ribot, *Essay on the Creative Imagination*, p. 95. Chicago, The Open Court Publishing Company, 1906.

[33] Spencer, *op. cit.*, II, 626.

[34] Francis Galton, *Inquiries into Human Faculty and Its Development*, pp. 208-216. London, MacMillan, 1883.

But if to a certain extent we can see the most diverse tendencies originate by way of habit before our very eyes, then we may also attribute a similar mnemonic origin to all affective tendencies, since the nature of innate tendencies differs in no wise from that of acquired tendencies. Very similarly in the case of morphological evolution we may consider that Lamarckianism is quite justified in drawing from the few observable cases of adaptation acquired during life, the conclusion that the entire structure of the organism owes its existence to an infinite number of similar functional adaptations.

Hence we may complete the saying quoted above with the phrase that on the other hand "nature" is nothing but a "first habit."

IV.

The hypothesis of the mnemonic origin and nature of all affective tendencies finds still further support in a property which is inherent in all of them, namely their "transference" which likewise is itself essentially mnemonic and by which all other affectivities are derived from those of direct mnemonic origin and thus come to have an indirect mnemonic origin (Ribot's "law of transference").

For in consequence of the "substitution of a part for the whole," a fundamental mnemonic principle frequently mentioned above, it happens that merely parts or fragments of certain environmental relations, striven for originally in their totality, or that "analogous" environmental relations, i. e., those that are only partly similar to one desired, or that environmental relations constituting "means" suited to the attainment of an "end" and therefore its necessary precursors, or, in fine, that environmental relations which constantly accompany this "end," evoke the same affectivity as the original "end" itself. Hence this affectivity is "transferred" from the whole to the part, and this at-

tachment for the part then becomes so much stronger that this partial relation which is first sought as a substitute for the whole finally constitutes in its turn an habitual environmental relation henceforward desired or sought for its own sake quite apart from the real and original affective "transference."

This is the case for instance, as has been mentioned above, with regard to copulation, the customary means for the elimination of germinal substance, and also with regard to the secondary sexual relations as phenomena usually accompanying copulation. The "conquest" of the other sex though only a necessary means for the satisfaction of sexual appetite finally becomes with certain individuals an end in itself. The pleasure in seducing for its own sake, the "sexual vanity" of both male and female and the other similar affectivities are further instances.

The case is the same with the tearing to pieces of prey which was originally the customary means for satisfying hunger but finally gave place to cruelty for cruelty's sake.

"One half of the animal race live upon prey; and as it is delightful to eat so it must be delightful to kill. Pleasurable also must be all the signs of discomfiture, the helpless struggles and agonized gestures of the victim."[35]

In man the love of victory for its own sake, ambition, thirst for power, desire for fame and glory, the endeavor to surpass his fellows, are all derived as consequences of further "transference."

In these and all other similar cases of affective transferences to environmental relations constantly becoming less material and more moral, besides the real proper affective transference which transforms the part into a new "end," there is always involved in man and in the higher

[35] Alexander Bain, *The Emotions of the Will*, 4th ed., London, Longmans Green, 1899, p. 65.

animals the cooperation of their own intellectual development.

For the intellect is constantly discovering new and unsuspected similarities between the most diverse phenomena, even between material and ethical phenomena, extending the same affectivities to the one class that are valid for the other; just as disgust for certain foods characterized by taste or odor as unwholesome extends to certain objects which can only be touched or seen (viscous bodies), and then, carrying the analogy still farther, even to simple "objects" or relations of an ethical order.[36]

At the same time inasmuch as the intellect foresees with constantly increasing sharpness the external phenomena to be expected as effects of given causes, it continues to devise new means more indirect and more complex for attaining its end, and thereby to open a broader sphere of efficiency for "affective transference." For instance the weapon which was invented by man as means for self-preservation has rendered possible an affective transference to himself which is characteristic of the warrior and the hunter; and the earth which the agriculturist has utilized to provide his own nourishment has made possible that intense love for the soil frequent among farmers.

Furthermore, since the intellect also foresees with increasing certainty internal psychical processes, it calls into being a large number of new affectivities destined to prevent possible future affective tendencies from remaining unsatisfied. For instance the anticipation of future hunger gives even the satiated man the inclination to lay up food that is left from a meal, and to keep it in his possession. Thus arises in general the sense of ownership, and in the same way the anticipation of the innumerable other desires which civilized man cherishes to-day excites in him an

[36] Ribot, *Psych. des sent.*, p. 212.—*Essai sur les passions*, pp. 65 ff.

intense longing for wealth, covetousness and similar passions.[37]

Finally, the intellect renders possible that infinite variety of shades of which affective tendencies are capable in man. For since it is able to observe from different points of view, simultaneously or nearly so, all environmental relations even when only slightly complex, it can evoke diverse affectivities at the same time, and these, as Bain would say, by association, combination, confluence, interference or mutual partial inhibition finally produce an exceedingly complex affectivity which is therefore capable of showing the finest imaginable gradations from one case to another according to the number and character of its component parts.

Thus, for instance, fear, anxiety and kindred feelings had already developed in animals from the instinct of self-preservation in its purely defensive form; but in man this latter gave rise also to all the propitiatory affectivities in innumerable varieties and shades, such as prostration, humility, hypocrisy, flattery and the like. Even the religious sentiment in its lowest forms is a direct consequence of this propitiatory affectivity, while the loftier religious sentiment and the kindred feeling experienced in the presence of the sublime are more highly developed and more complete forms of the same thing.[38]

Similarly from the instinct of self-preservation in its double aspect, offensive and defensive at the same time, had already developed in the higher animals the instinct to attack and all the different varieties of counter-attack; but in man this instinct has assumed the most varied forms and shades from deepest hatred to a scarcely perceptible antipathy, from rapacity to the merest envy, and from the

[37] Spencer, *Princ. of Psychol.*, I, 488 f.—Ribot, *Psychol. des sent.*, 110, 269-270.

[38] For instance, see Ribot, *Psych. des sent*, p. 100, and E. Rignano, "Il fenomeno religioso," *Scientia*, XIII, 1, 1910.

most violent thirst for revenge to the slightest resentment. The noble sentiment of justice is a very remote and hardly distinguishable derivative of the same instinct.[39]

How high may be the degree of complexity which can thus be attained is attested, for instance, by maternal love which has grown from the purely bodily necessity for lactation to the tenderest feelings of the noblest self-denial, and especially also by conjugal affection which has been transformed from coarse brutal sexual appetite to an harmonious cooperation of the gentlest and most delicate moral affectivities.[40]

Yet it is easily comprehensible that it would be useless and impossible to stop here to investigate all of the affectivities and their slightest shades which have in this way attained their origin and development in the higher animals and especially in man. Let these few indications suffice to render intelligible the fact that as soon as the organism has acquired in the direct mnemonic way a stock of affective tendencies and the intellect has attained its proper development, the number of affectivities which may be derived by "transference" and by "combination," that is to say, by indirect mnemonic means, is infinite.

V.

But few words are needed to indicate the place of affective tendencies among those fundamental psychical phenomena which are most closely connected with them, such as the emotions, the will, and the states of pleasure and pain.

Emotions are only sudden and violent modes of activation of those very accumulations of energy of which the affective tendencies consist.

[39] See Bain, *The Emotions and the Will*, pp. 117 f.—Ribot, *Psych. des sentiments*, pp. 229 f., 271 f.—*Problèmes de psychologie affective*, chap. III, "L'antipathie," Paris, Alcan, 1910.

[40] Spencer, *op. cit.*, I, 487 f.

Of course it is not always possible clearly to distinguish affective tendencies from emotions, since the former are perceptible neither objectively nor subjectively as long as they remain in a potential state, but become so at their activation which, when sudden and violent, represents the corresponding emotion. But the importance and necessity of distinguishing accurately between emotions and affective tendencies—a distinction however which is usually entirely neglected by most psychologists—lies in the fact that one and the same affective tendency may according to external circumstances give rise to the most diverse emotions, to the most diverse degrees of their intensity, or even to no emotion at all properly so called. For instance if we see a vehicle approaching at a distance we quietly step aside out of the way, but if it appears suddenly before us at an abrupt turn in the street we feel a strong emotional shock. And the same affective tendency of the dog towards a piece of meat can give rise to flight, anger, or the careful, coolly calculated search for a safe hiding place, according to the circumstances under which his dainty meal is endangered.

In short, every emotion, as Stout rightly emphasizes, presupposes an affective tendency, but the reverse does not follow; for an affective tendency even when in full activation need not always imply any emotion.[41]

Every affective tendency "impels" to action, that is, it not only "starts" but really "impinges" upon the organs of motion either directly as in the lower organisms or by the aid of the nervous system as in the higher. Therefore from the first moment of its activation it has the appearance of a "motion in the nascent state" (Ribot).

If its activation is sudden and intense the resulting activity of the motor muscles is accompanied by that of all the viscera. This "visceral cooperation" which thus

[41] See G. F. Stout, *A Manual of Psychology*, 2d. ed., p. 305, London, 1907.

takes place in connection with the emotions properly so called, is not, as Sherrington believes, due solely to the fact that the rapidity and intensity with which the muscles are set in motion induces the immediate action of the viscera which furnish the muscles with the material for their energy, but also and especially because there is an overflow of nervous energy, which suddenly released in great quantities acts like a flood, and pours forth in numerous other tracks than those closely connected with the locomotor apparatus.[42]

And this visceral commotion thus produced as a result of the sudden intense impulse, according to the well-known theory of James, Lange and Sergi, finds its centripetal echo in the brain in the form of an emotion.[43]

Hence it is the affective tendency which impels us and not the emotion, as Sherrington maintains in accordance with the prevalent confusion between affective tendency and emotion which cannot be too greatly deplored, and the emotion is only the reaction of a too rapid and intense manifestation of this tendency.

On the other hand if on account of external conditions or the psychical disposition of the individual the activation of the affective tendency takes place neither too suddenly nor with too great intensity, then only are the requisite muscles called into play without any emotion. Thus the amount of useful work accomplished as a result of the discharge of the affective tendency is greater in inverse proportion to the amount lost in the coordinated movements of a purely emotional significance. This is the reason why we generally observe the greatest determination, the most tenacious persistence in transactions,[44] the

[42] See Sherrington, *The Integrative Action of the Nervous System*, pp. 265 f.

[43] See the famous article of W. James, "What is an Emotion?" *Mind*, April, 1884, pp. 188-205.—Renault d'Allonnes, *Les inclinations*, 108 f.

[44] See Renault d'Allonnes, *Les inclinations*, pp. 207 f.

most intense and feverish activity in "unemotional" individuals.

As regards the will, an act of volition takes place whenever an affective tendency directed towards a future goal triumphs over an affective tendency whose aim is for the present; in other words, whenever a far-sighted affectivity is victorious over a short-sighted one. It is not the man who sweating and panting after a long run throws himself down to drink eagerly from a spring, who exercises an act of volition, but rather the one who forbears to slake his burning thirst for fear of a greater future evil. Likewise no act of volition is exerted when an exhausted wanderer throws himself down to sleep, but rather when a mountain climber overcomes exhaustion in order to reach the desired goal. And the act of a man who on a momentary impulse falls upon his opponent at the slightest provocation with hard words and fisticuffs does not demand any will power, as does the conduct of the man who bridles his just anger in order coolly to estimate to its remotest consequences the most appropriate procedure to enter upon against the offender.[45]

Essentially then the will is nothing else than a true and proper affective tendency which checks other affective tendencies because it is more far-sighted and which in its turn impels to action like all affective tendencies. "There is present in the action of will some desire of a good to be obtained or of an evil to be shunned, which imparts its driving force."[46]

Two extreme instances deserve special mention, for they include all other cases. The first of these may again be divided into two.

Sometimes one of the affective tendencies is so strong

[45] Cf. E. Meumann, *Intelligenz und Wille*, pp. 181 f. (Leipsic, Quelle und Meyer, 1908), although differing in many points.

[46] Maudsley, *The Physiology of Mind*, p. 339. London, MacMillan, 1876.

and persistent that it constantly outweighs all others; it checks them if it is contrary to them and strengthens them if it is in harmony with them. Such an "hypertrophied" affective tendency is called "passion" (Ribot, Renda). If it is directed towards some present aim we say that it overthrows the will because it successfully withstands the inhibitive effect of every other affective tendency directed towards the future; if on the other hand its own aim is in the future, an "ideal" whose attainment may require the work of a lifetime, then we say that the individual is persevering, stubborn, unyielding, endowed with an iron will, because every other opposed affective tendency directed toward an immediate end dashes in vain against it.

On the other hand it sometimes happens that the two conflicting affective tendencies are evenly balanced. At one moment the far-sighted tendency gains greater force and seems to triumph by turning the mind to new consequences in the future, but the next instant the short-sighted tendency discovers new or more clearly recognized aspects in the object desired for the time being, and becomes more intense, theatening again to gain the upper hand. The individual then falls in a state we call "indecision." When a philosopher discovers by introspection that he is in this situation, he will easily realize that both affectivities exist together within him, that they are "flesh of his flesh," and that the slightest and most insignificant psychical occurrence is enough to cause either one to gain ascendency over the other. It is clear that he can easily fall a prey to the illusion that nothing at all, any chance breath of wind, is enough to give one the preponderance over the other. This is the subjective illusion of free will which for many centuries has constituted the greatest and most difficult problem that philosophy has been called upon to solve.

Finally to come to the consideration of "pleasure" and "pain," it is the merit of the modern psychological school

that it has shown the fallacy of Bain's theory that the fundamental fact of animal life is the pursuit of "pleasure," in other words, the search for everything pleasant and the avoidance of everything unpleasant; and on the other hand that it has clearly emphasized that the conditions of pleasure and pain represent only the superficial part of the affective life, "of which the deep element consists in affective tendencies, positive or negative. . . . These are the elementary processes of affective life, of which pleasure and pain represent only the satisfaction or failure."[47]

Since an activation of nervous energy accompanies every "satisfaction" of any affective tendency, and every "disappointment" corresponds to an interruption or cessation of this energy, pleasure really corresponds to every state of discharge or activation of the nervous or vital energy, and pain to every state of inhibition or suppression of it.

In fact "painful" is every act inhibitive of certain nervous activities; "unpleasant" every too perceptible change of surrounding conditions which renders impossible the continuance of the hitherto stationary physiological state, "agonizing" every sudden and violent change of environment which brings about the complete stoppage or destruction of life in one or another part of the organism, and "sad" is the individual when there is a general diminution of vital functions within his organism.

Inversely, it is "pleasant" to exercise one's muscle in play and sport; the cessation of a strained condition of the soul is a "relief," the return to an accustomed environment and the resumption of habits is "welcome," and in general full of "joy" and "pleasure" is every state in which the organism experiences a greater activity of nervous energy.[48]

[47] Ribot, *Psychol. des sent.*, p. 2.—*Probl. de psych. aff.*, p. 16.

[48] See Ribot, *Psych. des sent.*, Part I, chapters I-III, especially pp. 52 f. and

It is sufficient here to indicate that the theory of the mnemonic origin of all affective tendencies which we have endeavored to explain and substantiate in this essay, offers a new argument in support of the modern psychological views with regard to the inmost nature of pleasure and pain. For in assigning to these affective tendencies the nature of mnemonic accumulations it implies that the fundamental principle of affective life can be nothing but the tendency to activation inherent in these accumulations, as is the case with every other accumulation of potential energy, and that therefore pain and pleasure, pleasant and painful states, can be nothing but the superficial and subjective side of this activation or of its inhibition.

VI.

Before terminating these few notes upon the nature of affective tendencies, we shall add a few remarks, which seem to us indispensable, on the fundamental character of these tendencies according to which they constitute a force, so to speak, with a definite end to be attained but with the path to be followed left undetermined.

Affective tendencies owe this property of gravitating toward an end while the means remain undecided, to the circumstance that they depend on the existence in a potential state of a certain general or local physiological system or state, which was determiend in the past by the outside world as a whole or by individual particular relations to this outside world, and which now like every other potential energy simply endeavors to remanifest itself as soon as it is released by the persistence or recurrence of even a small part of this environment or these environmental relations. For the result of the existence of this tendency is that the organism gravitates toward this environment

83 f.—W. Ostwald, *Vorlesungen über Naturphilosophie*, pp. 388 ff. Leipsic, Veit, 1905.

or these environmental relations rendering possible the recurrence of this physiological state, but it does not imply any "impulse" toward or "impingement" upon any one of the series of passing physiological states or movements which, even if they were capable of eventually bringing the organism back to the desired environment, nevertheless have nothing in common with the definitive physiological state itself which corresponds to this environment.

Only from the moment when one series of movements happens to bring the organism back to the desired environmental relations earlier than another one, will it have acquired an advantage over the others, and this result may be expressed by saying that the affective tendency has exercised a "choice" (James, Baldwin and the American school in general).

Hence it is only from that moment that the affective tendency will by mnemonic association constitute a force which "impels" these movements toward the end, just as certain reflex movements "impinge" on one another (Sherrington). And only from that moment will these movements (so long as they have not become mechanical in the form of reflexes) be determined exclusively under the pressure of the corresponding affectivity or the equivalent "act of the will."

However, until this takes place the affectivity betrays no tendency at all to discharge in one path rather than in another, hence the great difference between the affective tendency or act of will on the one hand, and the reflex movement on the other. This reflex movement, by means of which the act so "chosen" when often repeated becomes by mnemonic accumulation gradually mechanical and quite independent of the whole, represents a tendency to discharge along one single given path which is determined in advance. It is a force whose point of application and direction are known beforehand, and might therefore be

indicated graphically by the customary arrow used to represent the forces of mechanics. On the other hand the affective tendency constitutes a force of which neither the point of application nor the direction are predetermined but only the point towards which it tends. It is a "disposable" energy to be applied at will to this or that act so long as it leads to the desired end. Therefore it can be represented at the same time quite indefinitely by any of the infinite number of arrows which fill the entire volume of a cone and converge at its apex.

The reflex movement admits therefore of but a single solution. On the other hand its affective tendency admits of an indefinitely large number of solutions so long as none of the possible movements has been performed by chance and given rise to a choice; or when there are numerous equivalent paths to the goal.

This possibility of many solutions constitutes exactly the "unforeseen," the "antimechanical" behavior dependent on the affectivity or will, in contrast to the predetermined mechanical behavior of reflex movements or of any such complex combinations of reflex movements as certain instincts exhibit.

Finally it is this fundamental property of the affective tendency of constituting in some degree a force gravitating toward that environment or those particular environmental relations which permit the reactivation of certain mnemonic accumulations forming this very tendency, which lends that environment or those environmental relations the appearance of a *vis a fronte* or "ultimate cause" differing very essentially from the *vis a tergo* or "actual cause" which alone is operative in inorganic nature.[49]

The organism, writes Jennings, "seems to work toward a definite purpose. In other words, the final result of its

[49] See W. James, *Principles of Psychology*, I, pp. 7 f. London, Macmillan, 1901.

action seems to be present in some way at the beginning, determining what the action shall be. In this the action of living things appears to contrast with that of things inorganic."[50]

Now this "final result of its action" exists really from the beginning in the form of mnemonic accumulation. For that environment or those special environmental conditions to which the animal is gravitating operate now as *vis a fronte* inasmuch as they were formerly *vis a tergo* and in so far as the physiological activities then determined by them in the organism have left behind a mnemonic accumulation which now itself constitutes the real and true *vis a tergo,* moving the living being.[51]

Thus it is clear that one and the same explanation applies to all the "finalism" of life. For from the ontogenetic development which creates organs that cannot perform their functions until the adult state, to the property of all physiological states determined by certain environmental conditions to remanifest themselves at the first appearance of phenomena usually preceding these conditions, but in no wise constituting them; from the perfect way in which the organism in its entirety is morphologically adapted to its environment before the latter can exercise its formative influence, to all the wonderful formations and special structures so exactly adapted to all the most probable conditions to which this organism might later be exposed; from the simplest reflex motions that are directed so perfectly toward the preservation and welfare of the individual to the most complex instincts by means of which animals prepare in advance for future conditions of which they themselves are probably ignorant—all these "finalistic" phenomena of life, identical in their nature, can be

[50] Jennings, *Behavior of Lower Organisms,* p. 338.

[51] E. Mach, *Die Analyse der Empfindungen,* 5th ed., pp. 70, 78, Jena, Fischer; English edition: Chicago, Open Court Publishing Comany, 1897.

explained as so many manifestations of a purely mnemonic nature, as we have seen in our earlier writings mentioned above.

And now in the present essay we see that affective tendencies, which are even more conspicuously "finalistic" manifestations, are likewise based upon the mnemonic property of living substance, and hence in the last analysis upon the faculty of "specific accumulation," a faculty belonging exclusively to the nervous energy which underlies all life.

This mnemonic property, this faculty of "specific accumulation," which by its absence leaves inorganic nature exclusively in the power of forces *a tergo* and deprives it of every finalistic aspect, is on the other hand everywhere present in organic nature and because of its presence makes the world of life a world apart, of which the most characteristic elements cannot be explained by the laws of physics and chemistry alone in the limited sense assigned to them to-day.

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FRIEDRICH NIETZSCHE AND HIS DOCTRINE OF WILL TO POWER.

TO "boost" one's friends and to "knock" one's enemies constitutes the philosophy of no small number of men. It is true that most of these would be alarmed to think that so large a residuum of barbarism lingers in their breasts, but to this it amounts, however euphoniously it may be named. To these, striving for strength of individuality on their own part, and to those who, consciously or unconsciously, idolize this individuality when seen in others, as most of us do, it is refreshing to turn to the work of Friedrich Nietzsche, the great modern philosopher of individualism.

It is true that one who vaguely feels that might is not only right but good, and who, unable to find a logical justification for this attitude, is seeking one who can give it a consistent formulation, has little to hope from Nietzsche. For if there was anything about which Nietzsche felt little concern that thing was consistency. He was beyond consistency just as his "superman" was "beyond good and evil." What is valuable in his work is not its fitness to convince but to persuade. It has in it all of the delightful, and at the same time all of the disgusting, features which belong to any philosophy that is pure emotionalism. What he utters in his books is not what he thinks but what he feels. His whole philosophy is the incoherent cry of a sensitive and suffering mortal, who knows that he has

been stung but does not take time to locate the wound. His books are filled with flashes of indignation and of deep, wild yearning for freedom from the decadence into which humanity has fallen, but are absolutely lacking in method and in sober judgment.

But despite this intrusion of so much of the personal equation in his philosophy Nietzsche's work is by no means insignificant. Its influence upon modern life, particularly in some places, has been immense. Despite, too, his contempt for consistency there is dominant in one phase of his work—and this is the central phase—a single, consistent strain. This is his doctrine of the Will to Power as the goal of life. To this doctrine, then, as the most notable defense of individualism extant, and to an estimate of its place in ethics, we shall turn.

I.

From what has been said above it will doubtless be suspected that an account of Nietzsche's life would throw light upon his work as philosopher. And so it does, though in a very unique manner. It will, therefore, be quite appropriate to look for a minute or two into his biography for some clue to his strangely extravagant philosophy.

To one who bears in mind the well-known fact that a man's philosophy is almost inevitably an expression of his temperament, it is doubly surprising to hear that Nietzsche, who prided himself on being the "Philosopher of the Immoral," "was," as Hugge says, "the perfection of a well-mannered boy and never did anything naughty." His whole life was a complete contradiction of his philosophy. Instead of in the company of the lion-natured beyond-man he grew up under feminine influences, his father having died when the boy was only five years old. In spite of the fact that he claimed to have learned from no one, he was a model student who got along well with

his classmates and wrote affectionate poems in honor of his school. Though he taught that God is dead and despised Christianity as the greatest scheme of revenge ever perpetrated by a malicious set of slaves, he was certificated from his school as strong in religion. A frenzied contemner of the slightest restraint, he was an exemplary soldier in the German army. An advocate of relentless struggle in which the weaker should be given no quarter, and a fierce denouncer of sympathy, he was obliged by circumstances to go to the Franco-Prussian war as nurse in the hospital instead of warrior in the field. A calumniator of pity, he was so deeply touched by the suffering which he saw there in the hospital that his health was permanently impaired by the shock. A worshiper of that mighty prowess to which he would have his superman attain, he was himself, throughout the greater part of his life, an invalid, obliged to resign his professorship at Basel because of ill health and to pass his time in various southern health resorts, for the most part a recluse shut up within a little room darkened that the light might not injure his eyes. Yearning to meet one more immoral than himself from whom he might learn, he was taken by his neighbors for a saint and presented with candles for his evening prayers. Certainly fate could not have been more ironical.

Startling as is this incongruity, it by no means argues insincerity. Indeed, however immature we may think his judgment, certainly insincerity is the last thing with which Nietzsche can be charged. There are passages in his books—and particularly in the Zarathustra—that are almost tragic with their burden of pathetic earnestness. Indeed it is out of this very incongruity between his ideals and attainments that his earnestness arises, and it was to it that reference was made above when it was said that the story of Nietzsche's life throws light upon his philosophy. He saw in his own life an extreme case of the de-

cadence of man. All that he was not and could not be he yearned for with a mighty yearning. This he idealized and preached as the goal of the beyond-man. It was not primarily because he hated the life about him that he urged a transvaluation of all values, but because he loved an ideal beyond, of which his own lack had made him feel its worth the more.

But there were other factors also in the making of the philosopher. Philosophy was his fate rather than his choice. By profession he was a philologist and professor of philology in the University of Basel. He was not without distinction in his profession and gave promise of no insignificant future. But the proper work of the philologist was too limited in scope to satisfy him. He hungered for the larger methods of philosophy. So he gradually drifted away from his philological orthodoxy and began to discuss questions affecting the relation of music to the origin of the Greek drama. Indeed a semi-philosophical music, like that of Wagner, was to him the deepest expression of life—an expression in which the inarticulate will in nature made itself felt. But such dabbling offended his musty fellow philologists and cost him the reputation which he had earned by his earlier books. But he cared not for the philologists and went on expounding Wagner. About this time, too, Schopenhauer's book came into his hands and influenced him profoundly. For a while he stopped here as a disciple of Schopenhauer, but the great German pessimist served only as a stepping stone to a more positive philosophy. As Nietzsche himself says, Schopenhauer only enabled him to find his true self. And so he passed on inevitably from the Will to Live to the Will to Power.

But as might be expected, each added step toward radicalism cost him the loss of more friends—friends whom he could not afford to spare, for he loved the friendship of

strong men and women. His friendship for Wagner, whom he had almost worshiped, was gradually turned to hatred. He broke with his publisher and being unable to find another was obliged to have his books published at his own expense. Even his sister, who had understood him best and had sympathized with him most, was for a time estranged from him. His books would no longer sell and he turned his hopes to the future for a hearing. Of one of his now best known books he had only forty copies printed intending to distribute them among his friends but could dispose of only seven of them—so forsaken was he.

It must not be understood from this that Nietzsche was personally disagreeable. He was not. He was ostracized only because of his too great nobility—a nobility which would not permit him to compromise a single point for the sake of ease. Most of these estrangements were due to some insincerity in the character of the friend which was forced upon Nietzsche's attention and which he could not endure. Some others, as that of his sister—happily only temporary—were due to mistakes. None was due to any fault of Nietzsche's.

It is true that Nietzsche himself courted this hard life. The principles by which he admits having governed his actions were by no means such as to soften the pricks against which he inevitably ran. But Nietzsche had only contempt for those who so conducted their lives that they might be able to sleep well. "Seek I happiness?" he has Zarathustra say, "I seek my work."

A few words regarding his metaphysics—in so far as he had any—may also throw light upon his ethical doctrine. His philosophy he bases upon the assumption that God is dead—that is, not only the God of popular tradition but also God as the ultimate ground of the universe. What he finds everywhere is will, and not only will to live but

will to power. Moreover this is not a unified world will but many unrelated wills, each equally legitimate. It is the business of each thing then to force its way in the universe. Things are only what they are made. They are not found; they are created. "The doer," he says, "alone learneth." Apart from doing there is nothing to learn for facts do not hang together in such a way as to constitute truth. There is in the universe as such no unity, no coherence. It is foolish to speak about truth for there is no truth that belongs to the objective world. Only a fool would attempt to be consistent. The self is primal, the self is sovereign. There is no truth except what it creates.

One should not, then, permit one's self to be dominated by the past and its institutions. The present does not grow out of the past and owes nothing to it. It merely comes as it is made and stands entirely by itself. Values should not, therefore, be brought over from the past. The old tables should be broken and each day should make its own tables. To bind the present to the past by cords of convention is to fetter the sovereign self.

But this self which is sovereign is only "an earth head which giveth significance to earth." "He who is awake and knoweth saith 'body I am throughout and nothing besides; the soul is merely a word for something in body.'" The wisdom on which men pride themselves is only instinct. The processes that run through the universe are merely mechanical processes which run themselves out and then are reversed. This is Nietzsche's doctrine of the Eternal Recurrence, the doctrine that "all things recur eternally, ourselves included. . . . so that all these years are like unto each other in the greatest and in the smallest things." I leave the world now to find it again just as I left it. "Thus *willeth* mine eternal fate. As a proclaimer I perish. The

hour hath now come when the perishing one blesseth himself. Thus endeth Zarathustra's destruction."

II.

"The perishing one blesseth himself. Thus endeth Zarathustra's destruction." It is just thus that Nietzsche escapes pessimism. If one must perish then let one welcome perishing. If one has ugly passions then let him fully allow those passions and they become beautiful. He alone who attempts to fight fate and to crush out his instincts finds evil in the world, and whoever finds evil at all finds infinite evil since things eternally recur. Since this, then, is fate let man accept it. Let him say, as the fallen Satan did, if such be his instincts, "Evil be thou my good." "Thou laidest thy goal upon thy passions," says Nietzsche, "and they became thy virtue and thy delight." Let *Amor fati* be your motto. What you can not help, willingly embrace and call it good. To the irrevocable "it was" say "thus would I have it" and it remains no longer evil.

It is clear then that there can be no general ethical principles. "'This is my way; where is yours?' I answered unto those who asked me for the way. 'For *the* way existeth not.'" Any attempt to reduce life to order would be to suppress it. It would be to restrain the sovereign self. Whether authority is imposed from without or whether it is self imposed it is denial of life. "Good men," says Nietzsche, "never speak the truth. Whoever obeyeth doth not know himself." The proper society is an anarchistic society in which each one forces his own way and in which those who are not strong enough for this voluntarily go to the madhouse. "The state," says Nietzsche, "is a liar in all tongues of good and evil; whatever it saith it lieth, whatever it hath it hath stolen. . . . Verily this sign (i. e., the sign of the state because it attempts to enforce an

impossible equality) pointeth to the will unto death. Verily it waveth hands unto the preachers of death."

Only that has value which contributes to life. That alone is evil which crushes down life. Power is the goal of man. The will to power is the sovereign will which justifies itself and any means that the attainment of its goal demands. It is not quantity but quality that counts. "Too many are born," says Nietzsche, "For the superfluous the state was invented." For the evolution of the man of power the rabble must be freely sacrificed. He is not bound by the conventions of society. He is beyond good and evil. He is a law unto himself. He is the creator of values. He is not bound by the ties of the past. History centers about *him*. If he wishes to be ruthless then ruthlessness is his right. Indeed it is to be the special pride of the beyond-man that he has hewn his way up. "A right," says Zarathustra, "which thou canst take as a prey thou shalt not allow to be given to thee."

For the beyond-man there must be an entire transvaluation of all values. The virtues of the good are merely compromises within the herd by which they have agreed not to destroy each other. They are the conventions of cowards, not of strong men. They make toward death and not toward life. "With whom," says Nietzsche, "is the greatest danger for the whole human future? Is it not with the good and the just? For the good can not create, they are always the beginning of the end." But the virtue of the beyond-man will be in his immorality. It will be in his strength, in his might, in his towering grandeur. "What is evil," says Nietzsche, "is man's best power. Man must become better and more evil. Thus I teach. The evil is necessary for the best of beyond-man."

In the first place the beyond-man will be free from pity. Pity is weakening. It is a millstone about the neck of one who is seeking for egoistic power. It must be

killed or it will kill. "Pity," says Nietzsche, "was the murderer of God....He was suffocated with pity."

Nor will the beyond-man concern himself at all to serve the herd whether with or without pity. He will let the sick themselves wait upon the sick. This moral sickness which holds the herd in its grip is contageous so let him who has his health beware. Let him be strong and merciless. Let the strength of his posterity atone for the sacrifice of his neighbor. "Spare not thy neighbor," counsels Zarathustra, "for man is something that must be surpassed....Let the future and the most remote be for thee the cause of thy to-day."

Voluptuousness, thirst for power, and selfishness — these are the virtues of the beyond-man. But such a program meant to Nietzsche something far deeper than license. It was not a passive but an intensely active scheme of life which he was proposing. Upon these virtues he did not pitch because they were in defiance of the current morality but because he found them indispensable in the making of the man of power. He did not wish to dispense with morality but to change and, as he thought, to deepen, its meaning. If Nietzsche's beyond-man *is* to be beyond good and evil he will never be, as Nietzsche urges, beyond good and bad.

Nietzsche is not at all to be taken as primarily a hater, though hatred is about all that he succeeds in expressing. He despised man only in contrast with beyond-man, in the way of whose coming, man, with the good and evil of his slave morality, was standing. It is only when man forgets that he is a means and not a goal—which indeed he usually does—that Nietzsche directs his polemic against him. It is this new doctrine that man's glory lies in the fact that he is a means and not a goal, a rope between man and beyond-man, that Zarathustra comes down from the cave proclaiming, like John the Baptist from the wilder-

ness. All must be sacrificed, not on account of any evil that is involved in itself, but for the bringing in of the beyond-man. "My great love unto the most remote," says Nietzsche, "commandeth spare not thy neighbor. Man is something that must be surpassed." "From love alone my despising and my warning bird shall fly up, and not out of the swamp." "Oh my brethren," he says again, "when I bade you break the good and the tables of the good it was only that I put man on board ship for his high sea.... Walk upright in time, oh my brethren, learn how to walk upright. The sea stormeth. Many wish to raise themselves with your help. The sea stormeth, everything is in the sea. Up, upwards, ye old sailor hearts! What? A fatherland? Thither striveth our rudder where our *children's* land is. Out thither, stormier than the sea, our great longing stormeth."

But the doctrine of self-assertion which Nietzsche is advocating is by no means utilitarianism. It is true that he sometimes characterizes the state of the beyond-man as happiness but it is a very vigorous and even tragic kind of happiness. It is joy rather than happiness—the joy that one has in his strength when he is striving mightily and mastering. It is by no means that passive satisfaction which the utilitarian means by happiness. Indeed when he uses the word happiness to describe the state of the beyond-man he usually pairs it off with its direct opposite. It is an unnameable something that is at once joy and sorrow. "Unutterable and nameless," he says, "is that which maketh my soul's pain and sweetness, and it is a hunger of mine intestines," and at another place in speaking of the *optimum* he says, "It is not his road to happiness of which I am now speaking, but his road to power, to action, to mightiest action, and actually, in most cases, his road to unhappiness."

But, it may be asked, granted that this ideal of power

is true, does it necessarily involve the complete overturning of our tables or would it be sufficient if only we would interpret broadly our old rules of morality? Can power be attained, as Nietzsche thought, only beyond good and evil? The answer, I think, is clear. If you have in mind the type of power that Nietzsche did, and if you set it up as the sole measure of worth, then our present standards must be transcended. There can be no doubt that society, as now organized, must sacrifice the individual to the mass. There is constantly a centripetal force drawing both extremes toward a common mean. The weak are protected and the overstrong held in check. There is a constant clamor for charity institutions on the one hand and for graduated income taxes on the other. The weak man is given a lift and the strong man is envied and calumniated. It is the average man in whose making we are interested. In a dispute the presumption is always against the man of Nietzsche's hope. We leave him to take care of himself. Nothing seems more unethical to-day than the doctrine that to him that hath shall be given and from him that hath not shall be taken away even that which he hath. A society in which the mass was sacrificed to the production of the individual of power who intended to use and enjoy his power entirely egoistically would be a society in which values had been indeed transmuted.

III.

The defects of this doctrine are, I think, obvious. In the first place very few persons would be willing to accept the metaphysics upon which it is based or at least upon which it would need to be based for one who was concerned about being consistent. A materialism so thoroughgoing as that which Nietzsche sometimes expresses would not find many advocates at the present day. How "an earth-head" could "give signifi-

cance to earth" is something that I for my part can not understand. If "the soul is merely a name for something in body" it is the name for something that is of at least equal dignity with the body and probably by far the most important part of life. But if this is true then Nietzsche's emphasis is largely misplaced. The instincts, which he would unstintedly sanction, are the part of man which he brings up from the brutes rather than down from the gods, and they have no sacredness except for him who yearns back toward the brute. The thing that is most characteristic of man is conscious control rather than instinct. Certainly history has abundantly shown that man is most completely man not when he is giving rope to his instincts but when, at many points, he is inhibiting these, or at least organizing them into a larger unity.

In the next place a purely emotionalistic and nominalistic philosophy is certainly untenable. Nietzsche says in one of his apothegms, "We do the same when awake as when dreaming; we only invent and imagine him with whom we have intercourse and forget it immediately." But if we really do invent him with whom we have intercourse we at least invent him in a much more coherent way than that in which dreams are made. No one who wishes to be in the least true to experience can maintain that nature is wholly plastic. It is given, at least in part, independently of the capricious self and must be taken account of. Facts may be strung within certain limits so as to suit human purposes but withal they have a character of their own which no single self can capriciously transmute.

The isolated self is not, then, and can never be, wholly sovereign. It is not wholly true, as Nietzsche asserts, that no one can learn who does not create. There is something beyond which constitutes truth, and to which the ego must adjust itself if it is not to commit suicide. A self is not isolated but is a member of a larger system whether

it wishes to be or not. If it could be divorced from this system it would cease to be a self. One need not become a member of any human society to be bound by limitations over which he has no control. His individual caprice is just as securely blocked by the inflexibility of nature as by any social compacts. One can therefore approximate to sovereignty much more nearly by accepting certain social limitations in exchange for physical ones, for from the limitations imposed by physical conditions one can free himself to any great extent only by cooperating with his fellows and by accepting whatever limitations such cooperation makes necessary. The acceptance of such limitations is not the will unto death, as Nietzsche thinks, but rather the will to a larger life. It does not destroy sovereignty; it makes toward sovereignty, as far as sovereignty is possible for man. Only thus, indeed, if at all, can the mighty man be brought forth.

In another of his apothegms Nietzsche says, "It is a terrible thing to die of thirst at sea. It is necessary that you should so salt your truth that it will no longer quench thirst." Now to die of thirst at sea is exactly the fate that would overtake the beyond-man. If he is to attain to strength he must have mighty battles to fight. He can not attain added prowess, nor even maintain that which he has acquired, except by engaging in new conquests. But his battle could not be against himself for his ideal is to affirm rather than to deny his instincts. It could be only against weakness—against the slave morality and his tendency to revert to this. But suppose that Nietzsche's doctrine should ever come to prevail and the beyond-man should cease to be looked upon as the immoral one, whom then should he despise that his ruggedness might grow by feeding upon his contempt? Clearly then the salt with which his truth was salted would have lost its savor. One can not be a sovereign and yet remain a fighter. Struggle,

if it is to be real, demands something foreign to the individual, which has a will of its own, and which limits the will of him who encounters it. A too plastic world is no place for the hero. His supreme success is at the same time his supreme failure.

Even though one be seeking for individualistic power he dare not cut himself off from his fellows. The road to strength does not lead through the wilderness but through the market place. One's deepest problems are those which spring out of one's relation to one's fellows. One is on the surest road to might when he is boosting others as well as himself—when he is a champion instead of an outlaw. It may be true, indeed, that such conquests in and for society will call for self-denial, but self-denial for the sake of some larger victory is by no means "will unto death." If the sense of mastery has worth it has equal worth in whatever sphere it be won. If therefore Nietzsche is right in contending that power is the goal of life the method which he proposes for acquiring that power would certainly defeat its own end. A policy of exclusion and of constant yea-saying can never lead to sovereignty. If one wishes to be sovereign he must first learn to be servant. It is, then, the code of the independent self, rather than that of the member of the herd, which is "the virtue that maketh smaller."

It is scarcely necessary to say here that Nietzsche lacks utterly the historic spirit. That fact is only too glaring on every page of his books. The real motives back of the reigning types of religion and of morality he entirely misapprehended. Whatever errors may be involved in any religion, religion is by no means, in origin and essence, a gigantic scheme of revenge. The will to self-control in society does *not* spring, as Nietzsche supposed, from either hatred of life or cowardice. My love for my neighbor is *not* my bad love for myself. I do not restrain myself within

the limits of moderation merely in order that I may sleep well. That Nietzsche saw no more in life than that shows only that he had not looked beyond the surface and that he saw only external authority and fraud in principles that are rooted in the very nature of life.

But the coming of the beyond-man we need not fear. Nietzsche looked for him as the culmination of the process of biological evolution. But evolution is not tending in that direction and is not at all likely to do so. Greater social solidarity, and not greater independence of the component parts, is the unmistakable drift. The beyond-man will be "beyond" only in the degree of his acquiescence in good and evil and not in his defiance of them. Social solidarity has always been a greater factor in survival than individual strength. The isolated beyond-man of Nietzsche's dream would have, then, less chance of surviving than a band of monkeys. Thus, instead of making toward death, pity, sympathy, and acquiescence in authority are the only conditions upon which life remains possible. A new type of morality which left these out could never lift man above himself.

IV.

But certainly Nietzsche was right when he maintained that life is primal. Knowledge and truth *are* for the sake of life. Facts are true only when they have been so formulated as to function efficiently in life. If they have not been so formulated a truer formulation is possible. Virtue, too, is nothing in itself. "Virtue for virtue's sake" is a perversion that well deserves the bitterest polemic. Too often it has been forgotten that the moral law, like the Sabbath, was made for man and not man for the law. Too often fulness of life is sacrificed to an outworn abstraction which is taken to be a principle having worth in itself. In

Nietzsche's time this dogmatism was particularly prevalent and his reaction against it was altogether proper.

He is right, too, in contending that standards of value must be transmuted and that the old tables must be broken. Rightly a table of virtues or of duties should never be made, for it can be at best only a gross approximation to what it should be. The occasion alone defines the duty. Each situation calls for a unique solution and can be solved only in terms of the expected contribution which will be made to life. Rightly there should be no moral law except what the self finds good as each particular occasion arises. Of course so free a self should have a criterion deeper than the moment's caprice, but in an ideal world the agent should not be hampered by any artificial formulas.

There is a certain amount of truth, too, in Nietzsche's doctrine of the sovereignty of the self. One has a right to resent being imposed upon. A self is a person and not a thing. In so far as a self is used merely as a tool it is not a self. Its selfhood consists in its autonomy. Obligation can not be imposed from without. It must be freely accepted. Even God could not impose obligation upon a self without retracting its selfhood. Nietzsche would be right, therefore, in spurning restraints if they were merely external. They can be justified only when they are self-imposed—a possibility which Nietzsche did not take with sufficient seriousness.

But a self-imposed or, which is the same thing, a self-accepted, restraint is quite consistent with the sovereignty of the self. It is of this kind that moral principles are. Social institutions are not thrust upon men by the gods or by cunning schemers. They are slowly evolved with the implied consent of those who accept them and are acquiesced in because they add to the fulness of life. The hardships which they chance to involve are accepted along with their blessings, for rational animals realize that when

they have accepted a scheme they have implied in its acceptance acquiescence in its consequences. Even, then, if they as individuals should suffer in consequence of those institutions such suffering would be no imposition from without upon the sovereign self.

Nietzsche's doctrine of the worth of the sense of power is not by any means without a parallel in the history of philosophy. It forms the core of all Fichtean and Hegelian philosophy. Life would be sterile without conquest, say the thinkers of this type. In such a world as that with which we are acquainted, at any rate, we can attain to character only through struggle and through suffering. Attainment, except as the culmination of such struggle, would be a tame affair. We prize things only in proportion to the effort which we must make to get them. The sense of mastery, the sense of power, has worth, and supreme worth. Life would lose much of its significance were the necessity for struggle, and the possibility of the sense of mastery which can come only with struggle, taken away. "In the sweat of thy brow shalt thou eat bread" turns out to be a blessing and not a curse. The results of a game which can be put into statistical form are by far the least significant results. It is the sense of power that victory gives that counts for most.

But this craving for power is not merely an instance of human perversity. It is the deepest of all metaphysical facts. It is in terms of it that the universe is to be expressed. There is no reason why God should go beyond himself to create a world except that there might be a field for conquest and hence for the enrichment of being. And having created a world there is no reason why he should not have created it complete and perfect at a single stroke except the fact that power through conquest is better than static perfection. There is no other reason why God should permit the course of existence to roll on

through such a devious path, approaching its goal only in an asymptotical manner. God is not bound by any implications within the system of existent things. Why should he not, then, suspend the rules of the game and bring the world to its goal in a single leap? Nothing can limit an infinite self. By suspending the rules he could injure no one but himself.

Ah, but he would injure himself. He would annihilate himself just because, even for God, life lies in the quest. It is not the end but what is involved in attaining the end that counts. To abandon a purpose is to abandon selfhood, for a self can be defined only in terms of the pursuit of a specific goal. The reality is in the process, in the struggle. The worth, then, is not in the consummated victory, for this is infinitely far away, but in a progressive synthesis, in mastery, in power.

But if power has value for the whole it also has value for the particularizations of that whole. The finite life is a part, an aspect, of the divine life. What is God's is also man's and what is man's is God's. The infinite self is made up of his particular self-expressions. What, then, is a factor in his life must be a factor also in these. If conquest, and power through conquest, alone can constitute worth for God it must also constitute worth for man. For him, too, life must lie in the quest. The power that is his is not his alone. It is also his contribution to the whole, precisely because he is that whole in one of its phases of self-activity.

But perhaps such an excursion into a system of metaphysics with which many persons will not agree should not be attempted here. It is not necessary for our purpose. The logic of passion holds as well in a pluralistic as in a monistic universe—for an isolated finite self as well as for an infinite self. Indeed we impute it to the Infinite merely on the basis of what we see about us. It is the very essence

of passion to seek its antithesis — to desire a problem through the solution of which it may assert its mastery. If there were in the universe nothing but "an earth-head," as Nietzsche thought was the case, that earth-head would disintegrate the moment it had fought its last battle and won its last victory. That this is true shows what a vital place the struggle for mastery, for power, holds in life however life may be viewed.

But why, one may ask, should a self choose so painful a lot? Would not life be less tragic if one were satisfied with calmer joys? Why not pleasure instead of power? Is it not a sufficient justification of a policy of life that it enables one to sleep well? Well, one can only reply to him who wishes that the universe had been so made that most of us would not want it so. We can give no other reason for preferring power through struggle except that, despite its painful suspense and its hard knocks, it approves itself to us as valuable. Should one say, as the charcoal of Nietzsche's fable to the diamond, "Why so hard, brother?", it is sufficient reply to answer merely "Why so soft?" There is a joy in the sense of power which no amount of passive pleasure could ever equal. Very few of us, indeed, would be willing to exchange the militant life of this terrestrial sphere for a heaven of inactivity where we could wallow forever in the mud and bask eternally in the sunshine.

And so, when rightly defined, the will to power has a legitimate place in morality. Of course one must not define power merely in physical terms and one must realize that it can be truely attained only as it is shared. But thus shared and thus broadly defined it must find its place in any adequate scheme of life.

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MAX STIRNER, THE PREDECESSOR
NIETZSCHE.

FRIEDRICH NIETZSCHE, the author o
Spake Zarathustra" and the inventor of a n
called the "overman," is commonly regarded as t
extreme egotist, to whom morality is non-existent
glories in the coming of the day in which a ma
liking—the overman—would live *au grand jour.*
losophy is an individualism carried to its utmost
sanctioning egotism, denouncing altruism and esta
the right of the strong to trample the weak unc
It is little known, however, that he followed
thinker, Johann Caspar Schmidt, whose extreme
ualism he adopted. But this forerunner who pre
philosophy of the sovereignty of self and an utter d
of our neighbors' rights remained unheeded; he
obscurity, he died in poverty, and under the pse
"Max Stirner" he left behind a book entitled *Der*
und sein Eigentum.

The historian Lange briefly mentioned him in
tory of Materialism, and the novelist John Henry
followed up the reference which led to the discover
lonely comet on the philosophical sky.

The strangest thing about this remarkable b
sists in the many coincidences with Friedrich Ni
philosophy. It is commonly deemed impossible
famous spokesman of the overman should not ha

thoroughly familiar with this failure in the philosophical book market; but while Stirner was forgotten the same ideas transplanted into the volumes of the author of "Thus Spake Zarathustra" found an echo first in Germany and soon afterwards all over the world.

Stirner's book has been Englished by Stephen T. Byington with an introduction by J. L. Walker at the instigation of Benjamin R. Tucker, the representative of American peaceful anarchism, under the title *The Ego and His Own*. They have been helped by Mr. George Schumm and his wife Mrs. Emma Heller Schumm. These five persons, all interested in this lonely and unique thinker, must have had much trouble in translating the German original and though the final rendering of the title is not inappropriate, the translator and his advisers agree that it falls short of the mark. For the accepted form Mr. B. R. Tucker is responsible, and he admits in the preface that it is not an exact equivalent of the German. *Der Einzige* means "the unique man," a person of a definite individuality, but in the book itself our author modifies and enriches the meaning of the term. The unique man becomes the ego and an owner (*ein Eigener*), a man who is possessed of property, especially of his own being. He is a master of his own and he prides himself on his ownhood, as well as his ownership. As such he is unique, and the very term indicates that the thinker who proposes this view-point is an extreme individualist. In Stirner's opinion Christianity pursued the ideal of liberty, liberty from the world; and in this sense Christians speak of spiritual liberty. To become free from anything that oppresses us we must get rid of it, and so the Christian to rid himself of the world becomes a prey to the idea of a contempt of the world. Stirner declares that the future has a better lot in store for man. Man shall not merely be free, which is a purely negative quality, but he shall be his own master; he shall become an owner

of his own personality and whatever else he may have to control. His end and aim is he himself. There is no moral duty above him. Stirner explains in the very first sentence of his book:

"What is not supposed to be my concern! First and foremost, the good cause, then God's cause, the cause of mankind, of truth, of freedom, of humanity, of justice; further, the cause of my people, my prince, my fatherland; finally, even the cause of mind, and a thousand other causes. Only *my* cause is never to be my concern. 'Shame on the egoist who thinks only of himself!'"

Stirner undertakes to refute this satirical explanation in his book on the unique man and his own, and a French critic according to Paul Lauterbach (p. 5) speaks of his book as *un livre qu'on quitte monarque*, "a book which one lays aside a king."

Stirner is opposed to all traditional views. He is against church and state. He stands for the self-development of every individual, and insists that the highest duty of every one is to stand up for his ownhood.

J. L. Walker in his Introduction contrasts Stirner with Nietzsche and gives the prize of superiority to the former, declaring him to be a genuine anarchist not less than Josiah Warren, the ideal of the small band of New England anarchists. He says:

"In Stirner we have the philosophical foundation for political liberty. His interest in the practical development of egoism to the dissolution of the state and the union of free men is clear and pronounced, and harmonizes perfectly with the economic philosophy of Josiah Warren. Allowing for difference of temperament and language, there is a substantial agreement between Stirner and Proudhon. Each would be free, and sees in every increase of the number of free people and their intelligence an auxiliary force against the oppressor. But, on the other hand, will any one for a moment seriously contend that Nietzsche and Proudhon march together in general aim and tendency,—that they have anything in common except the daring to profane the shrine and sepulcher of superstition?

"Nietzsche has been much spoken of as a disciple of Stirner, and, owing to favorable cullings from Nietzsche's writings, it has occurred that one of his books has been supposed to contain more sense than it really does—so long as one had read only the extracts.

"Nietzsche cites scores or hundreds of authors. Had he read everything, and not read Stirner?

"But Nietzsche is as unlike Stirner as a tight-rope performance is unlike an algebraic equation.

"Stirner loved liberty for himself, and loved to see any and all men and women taking liberty, and he had no lust of power. Democracy to him was sham liberty, egoism the genuine liberty.

"Nietzsche, on the contrary, pours out his contempt upon democracy because it is not aristocratic. He is predatory to the point of demanding that those who must succumb to feline rapacity shall be taught to submit with resignation. When he speaks of 'anarchistic dogs' scouring the streets of great civilized cities, it is true, the context shows that he means the communists; but his worship of Napoleon, his bathos of anxiety for the rise of an aristocracy that shall rule Europe for thousands of years, his idea of treating women in the Oriental fashion, show that Nietzsche has struck out in a very old path—doing the apotheosis of tyranny. We individual egoistic anarchists, however, may say to the Nietzsche school, so as not to be misunderstood: We do not ask of the Napoleons to have pity, nor of the predatory barons to do justice. They will find it convenient for their own welfare to make terms with men who have learned of Stirner what a man can be who worships nothing, bears allegiance to nothing. To Nietzsche's rhodomontade of eagles in baronial form, born to prey on industrial lambs, we rather tauntingly oppose the ironical question: Where are your claws? What if the 'eagles' are found to be plain barnyard fowls on which more silly fowls have fastened steel spurs to hack the victims, who, however, have the power to disarm the sham 'eagles' between two suns?

"Stirner shows that men make their tyrants as they make their gods, and his purpose is to unmake tyrants.

"Nietzsche dearly loves a tyrant.

"In style Stirner's work offers the greatest possible contrast to the puerile, padded phraseology of Nietzsche's *Zarathustra* and its false imagery. Who ever imagined such an unnatural conjuncture as an eagle 'toting' a serpent in friendship? which performance is told of in bare words, but nothing comes of it. In Stirner we are treated to an enlivening and earnest discussion addressed to serious

minds, and every reader feels that the word is to him, for his instruction and benefit, so far as he has mental independence and courage to take it and use it. The startling intrepidity of this book is infused with a whole-hearted love for all mankind, as evidenced by the fact that the author shows not one iota of prejudice or any idea of division of men into ranks. He would lay aside government, but would establish any regulation deemed convenient, and for this only *our* convenience is consulted. Thus there will be general liberty only when the disposition toward tyranny is met by intelligent opposition that will no longer submit to such a rule. Beyond this the manly sympathy and philosophical bent of Stirner are such that rulership appears by contrast a vanity, an infatuation of perverted pride. We know not whether we more admire our author or more love him.

"Stirner's attitude toward woman is not special. She is an individual if she can be, not handicapped by anything he says, feels, thinks, or plans. This was more fully exemplified in his life than even in this book; but there is not a line in the book to put or keep woman in an inferior position to man, neither is there anything of caste or aristocracy in the book."

It is not our intention to enter here into a detailed criticism of Stirner's book. We will only point out that society will practically remain the same whether we consider social arrangements as voluntary contracts or as organically developed social institutions, or as imposed upon mankind by the divine world-order, or even if czars and kings claim to govern "by the grace of God." Whatever religious or natural sanction any government may claim to possess, the method of keeping order will be the same everywhere. Wrongs have been done and in the future may still be committed in the name of right, and injustice may again and again worst justice in the name of the law. On the other hand, however, we can notice a progress throughout the world of a slow but steady improvement of conditions. Any globe-trotter will find by experience that his personal safety, his rights and privileges are practically the same in all civilized countries, whether they are republics like Switzerland, France and the United States,

or monarchies like Sweden, Germany and Italy. At the same time murders, robberies, thefts and other crimes are committed all over the world, even in the homes of those who pride themselves on being the most civilized nations. The world-conception lying behind our different social theories is the same wherever the same kind of civilization prevails. Where social evils prevail, dissatisfaction sets in which produces theories and reform programs, and when they remain unheeded by reaching a certain climax, leads to revolution.

Stirner's book begins with a short exhortation headed with Goethe's line,

"My trust in nothingness is placed."

He discusses the character of human life (Chap. I) and contrasts men of the old and the new eras (Chap. II). He finds that the ancients idealized bodily existence while Christianity incarnates the ideal. Greek artists transfigure actual life; in Christianity the divine takes abode in the world of flesh, God becomes incarnate in man. The Greeks tried to go beyond the world and Christianity came; Christian thinkers are pressed to go beyond God, and there they find spirit. They are led to a contempt of the world and will finally end in a contempt of spirit. But Stirner believes that the ideal and the real can never be conciliated, and we must free ourselves from the errors of the past. The truly free man is not the one who has become free, but the one who has come into his own, and this is the sovereign ego.

As Achilles had his Homer so Stirner found his prophet in a German socialist of Scotch Highlander descent, John Henry Mackay. The reading public should know that Mackay belongs to the same type of restless reformers, and he soon became an egoistic anarchist, a disciple of Stirner. His admiration is but a natural consequence of

conditions. Nevertheless Mackay's glorification of Stirner proves that in Stirner this onesided world-conception has found its classical, its most consistent and its philosophically most systematic presentation. Whatever we may have to criticize in anarchism, Stirner is a man of uncommon distinction, the leader of a party, and the standard-bearer of a cause distinguished by the extremeness of its propositions which from the principle of individualism are carried to their consistent ends.

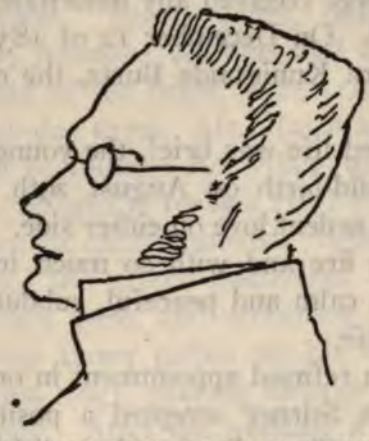
Mackay undertook the difficult task of unearthing the history of a man who, naturally modest and retired, had nowhere left deep impressions. No stone remained unturned and every clue that could reveal anything about his hero's life was followed up with unprecedented devotion. He published the results of his labors in a book entitled "Max Stirner, His Life and His Work."[1] The report is extremely touching not so much on account of the great significance of Stirner's work which to impartial readers appears exaggerated, but through the personal tragedy of a man who towers high over his surroundings and suffers in the misery of poverty and failure.

Mr. Mackay describes Stirner as of medium height, rather less so than more, well proportioned, slender, always dressed with care though without pretension, having the appearance of a teacher, and wearing silver- or steel-rimmed spectacles. His hair and beard were blonde with a tinge of red, his eyes blue and clear, but neither dreamy nor penetrating. His thin lips usually wore a sarcastic smile, which however had nothing of bitterness; his general appearance was sympathetic. No portrait of Stirner is in existence except one pencil sketch which was made from memory in 1892 by the London socialist Friedrich Engels, but the criticism is made by those who knew Stirner that his features, especially his chin and the top of his head,

[1] *Max Stirner, sein Leben und sein Werk.* Berlin, Schuster, 1898.

were not so angular though nose and mouth are said to have been well portrayed, and Mackay claims that he never wore a coat and collar of that type.

Stirner was of purely Frankish blood. His ancestors lived for centuries in or near Baireuth. His father, Albert Christian Heinrich Schmidt of Anspach, a maker of wind-instruments, died of consumption in 1807 at the age of 37, a half a year after the birth of his son. His mother, Sophie Eleanora, née Reinlein of the city of Erlangen, six months later married H. F. L. Ballerstedt, the assistant in an



PENCIL SKETCH OF MAX STIRNER.
The only portrait in existence.

apothecary shop in Helmstedt, and moved with him to Kulm on the Vistula. In 1818 the boy was sent back to his native city where his childless god-father and uncle Johann Caspar Martin Sticht and his wife took care of him.

Young Johann Caspar passed through school with credit, and his schoolmates used to call him "Stirner" on account of his high forehead (*Stirn*) which was the most conspicuous feature of his face. This name clung to him throughout life. In fact his most intimate friends never

called him by any other, his real name being almost forgotten through disuse and figuring only in official documents.

Stirner attended the universities of Erlangen, Berlin and Königsberg, and finally passed his examination for admission as a teacher in gymnasial schools. His stepfather died in the summer of 1837 in Kulm at the age of 76. It is not known what became of his mother who had been mentally unsound for some time.

Neither father nor stepfather had ever been successful, and if Stirner ever received any inheritance it must have been very small. On December 12 of 1837 Stirner married Agnès Clara Kunigunde Burtz, the daughter of his landlady.

Their married life was brief, the young wife dying in a premature child-birth on August 29th. We have no indication of an ardent love on either side. He who wrote with passionate fire and with so much insistence in his philosophy, was calm and peaceful, subdued and quiet to a fault in real life.

Having been refused appointment in one of the public or royal schools Stirner accepted a position in a girls' school October 1, 1839. During the political fermentation which preceded the revolutionary year of 1848, he moved in the circle of those bold spirits who called themselves *Die Freien* and met at Hippel's, among whom were Ludwig Buhl, Meyen, Friedrich Engels, Mussak, C. F. Köppenn, the author of a work on Buddha, Dr. Arthur Müller and the brothers Bruno, Egbert and Edgar Bauer. It was probably among their associates that Stirner met Marie Dähnhardt of Gadebusch near Schwerin, Mecklenburg, the daughter of an apothecary, Helmuth Ludwig Dähnhardt. She was as different from Stirner as a dashing emancipated woman can be from a gentle meek man, but these contrasts were joined together in wedlock on October

21, 1843. Their happiness did not last long, for Marie Dähnhardt left her husband at the end of three years.

The marriage ceremony of this strange couple has been described in the newspapers and it is almost the only fact of Stirner's life that stands out boldly as a well-known incident. That these descriptions contain exaggerations and distortions is not improbable, but it cannot be denied that much contained in the reports must be true.

On the morning of October 21, a clergyman of extremely liberal views, Rev. Marot, a member of the Consistory, was called to meet the witnesses of the ceremony at Stirner's room. Bruno Bauer, Buhl, probably also Julius Faucher, Assessor Kochius and a young English woman, a friend of the bride, were present. The bride was in her week-day dress. Mr. Marot asked for a Bible, but none could be found. According to one version the clergyman was obliged to request Herr Buhl to put on his coat and to have the cards removed. When the rings were to be exchanged the groom discovered that he had forgotten to procure them, and according to Wilhelm Jordan's recollection Bauer pulled out his knitted purse and took off the brass rings, offering them as a substitute during the ceremony. After the wedding a dinner with cold punch was served to which Mr. Marot was invited. But he refused, while the guests stayed on and the wedding carousal proceeded in its jolly course.

In order to understand how this incident was possible we must know that in those pre-revolutionary years the times were out of joint and these heroes of the rebellion wished to show their disrespect and absolute indifference to a ceremony that to them had lost all its sanctity.

Stirner's married life was very uneventful, except that he wrote the main book of his life and dedicated it to his wife after a year's marriage, with the words,

"Meinem Liebchen
Marie Dähnhardt."

Obviously this form which ignores the fact that they were married, and uses a word of endearment which in this connection is rather trivial, must be regarded as characteristic for their relation and their life principles. Certain it is that she understood only the negative features of her husband's ideals and had no appreciation of the genius that stirred within him. Lauterbach, the editor of the Reclam edition of Stirner's book, comments ironically on this dedication with the Spanish motto *Da Dios almendras al que no tiene muelas,* "God gives almonds to those who have no teeth."

Marie Dähnhardt was a graceful blonde woman rather under-sized with heavy hair which surrounded her head in ringlets according to the fashion of the time. She was very striking and became a favorite of the round table of the *Freien* who met at Hippel's. She smoked cigars freely and sometimes donned male attire, in order to accompany her husband and his friends on their nightly excursions. It appears that Stirner played the most passive part in these adventures, but true to his principle of individuality we have no knowledge that he ever criticized his wife.

Marie Dähnhardt had lost her father early and was in possession of a small fortune of 10,000 thalers, possibly more. At any rate it was considered quite a sum in the circle of Stirner's friends, but it did not last long. Having written his book, Stirner gave up his position so as to prevent probable discharge and now they looked around for new resources. Though Stirner had studied political economy he was a most unpractical man; but seeing there was a dearth of milk-shops, he and his wife started into business. They made contracts with dairies but did not advertise their shop, and when the milk was delivered to

them they had large quantities of milk on hand but no patrons, the result being a lamentable failure with debts.

In the circle of his friends Stirner's business experience offered inexhaustible material for jokes, while at home it led rapidly to the dissolution of his marriage. Frau Schmidt complained in later years that her husband had wasted her property, while no complaints are known from him. One thing is sure that they separated. She went to England where she established herself as a teacher under the protection of Lady Bunsen, the wife of the Prussian embassador.

Frau Schmidt's later career is quite checkered. She was a well-known character in the colony of German exiles in London. One of her friends there was a Lieutenant Techow. When she was again in great distress she emigrated with other Germans, probably in 1852 or 1853, to Melbourne, Australia. Here she tasted the misery of life to the dregs. She made a living as a washerwoman and is reported to have married a day laborer. Their bitter experiences made her resort to religion for consolation, and in 1870 or 1871 she became a convert to the Catholic Church. At her sister's death she became her heir and so restored her good fortune to some extent. She returned to London where Mr. Mackay to his great joy discovered that she was still alive at the advanced age of eighty. What a valuable resource her reminiscences would be for his inquiries! But she refused to give any information and finally wrote him a letter which literally reads as follows: "Mary Smith *solemnly avowes* that she will have *no more* correspondence on the subject, and authorizes Mr. ——[2] to return all those writings to their owners. She is ill and prepares for death."

The last period of Stirner's life, from the time when

[2] The name of the gentleman she mentions is replaced by a dash at his express wish in the facsimile of her letter reproduced in Mr. Mackay's book (p. 255.)

his wife left him to his death is as obscure as his childhood days. He moved from place to place, and since his income was very irregular creditors pressed him hard. His lot was tolerable because of the simple habits of his life, his only luxury consisting in smoking a good cigar. In 1853 we find him at least twice in debtor's prison, first 21 days, from March 5 to 26, 1853, and then 36 days, from New Year's eve until February 4 of the next year. In the meantime (September 7) he moved to Philippstrasse 19. It was Stirner's last home. He stayed with the landlady of this place, a kind-hearted woman who treated all her boarders like a mother, until June 25, 1856, when he died rather suddenly as the result of the bite of a poisonous fly. A few of his friends, among them Bruno Bauer and Ludwig Buhl, attended his funeral; a second-class grave was procured for one thaler 10 groats, amounting approximately to one American dollar.

During this period Stirner undertook several literary labors from which he possibly procured some remuneration. He translated the classical authors on political economy from the French and from the English, which appeared under the title *Die National-Oekonomen der Franzosen und Engländer* (Leipsic, Otto Wigand, 1845-1847).

He also wrote a history of the Reaction which he explained to be a mere counter-revolution. This *Geschichte der Reaction* was planned as a much more comprehensive work, but the two volumes which appeared were only two parts of the second volume as originally intended.

The work is full of quotations, partly from Auguste Comte, partly from Edmund Burke. None of these works represent anything typically original or of real significance in the history of human thought.

His real contribution to the world's literature remains his work *Der Einzige und sein Eigentum*, the title of which is rendered in English *The Ego and His Own,* and this,

strange to say, enthrones the individual man, the ego, every personality, as a sovereign power that is not subject to morality, or rules, or obligations, or duties of any kind. The appeal is made so directly that it will convince all those half-educated and immature minds who after having surrendered their traditional faith find themselves without any authority in either religion or politics. God is to them a fable and the state an abstraction. Ideas and ideals, such as truth, goodness, beauty, are mere phrases. What then remains but the concrete bodily personality of every man of which every one is the ultimate standard of right and wrong?

It is strange that neither of these philosophers of individuality, Nietzsche or Stirner, has ever taken the trouble to investigate what an individual is. Stirner halts before this most momentous question of his world-conception, and so he overlooks that his ego, his own individuality, this supreme sovereign standing beyond right and wrong, the ultimate authority of everything, is a hazy, fluctuating, uncertain thing which differs from day to day and finally disappears.

The individuality of any man is the product of communal life. No one of us could exist as a rational personality were he not a member of a social group from which he has imbibed his ideas as well as his language. Every word is a product of his intercourse with his fellow-beings. His entire existence consists in his relations toward others and finds expression in his attitude toward social institutions. We may criticize existent institutions but we can never do without any. A denial of either their existence or their significance proves an utter lack of insight into the nature of personality.

We insert here a few characteristic sentences of Stirner's views, and in order to be fair we follow the condensation of Mackay (pp. 135-192) than whom certainly we

could find no more sympathetic or intelligent student of this individualistic philosophy. Stirner claims the ancients came to the conclusions that man was spirit. They created a world of spirit, and in this world of spirit Christianity begins. But what is spirit? Spirit has originated from nothing. It is its own creation and man makes it the center of the world. The injunction was made, thou shalt not live to thyself but to thy spirit, to thy ideas. Spirit is the God, the ego and the spirit are in constant conflict. Spirit dwells beyond the earth. It is in vain to force the divine into service here for I am neither God nor man, neither the highest being nor my being. The spirit is like a ghost whom no one has seen, but of whom there are innumerable creditable witnesses, such as grandmother can give account of. The whole world that surrounds thee is filled with spooks of thy imagination. The holiness of truth which hallows thee is a strange element. It is not thine own and strangeness is a characteristic of holiness. The specter is truly only in thine ownhood . . . . . Right is a spleen conferred by a spook; might, that is myself. I am the mighty one and the owner of might . . . . . Right is the royal will of society. Every right which exists is created right. I am expected to honor it where I find it and subject myself to it. But what to me is the right of society, the right of all? What do I care for equality of right, for the struggle for right, for inalienable rights? Right becomes word in law. The dominant will is the preserver of the states. My own will shall upset them. Every state is a despotism. All right and all power is claimed to belong to the community of the people. I, however, shall not allow myself to be bound by it, for I recognize no duty even though the state may call crime in me what it considers right for itself. My relation to the state is not the relation of one ego to another ego. It is the relation of the sinner to the saint, but the saint is a

mere fixed idea from which crimes originate (Mackay, pages 154-5).

It will sometimes be difficult to translate Stirner's declarations in their true meaning; for instance: "I am the owner of mankind, I am mankind and shall do nothing for the benefit of another mankind. The property of mankind is mine. I do not respect the property of mankind. Poverty originates when I can not utilize my own self as I want to. It is the state which hinders men from entering into a direct relation with others. On the mercy of right my private property depends. Only within prescribed limits am I allowed to compete. Only the medium of exchange, the money which the state makes, am I allowed to use. The forms of the state may change, the purpose of the state always remains the same. My property, however, is what I empower myself to. Let violence decide, I expect all from my own.

"You shall not lure me with love, nor catch me with the promise of communion of possessions, but the question of property will be solved only through a war of all against all, and what a slave will do as soon as he has broken his fetters we shall have to see. I know no law of love. As every one of my sentiments is my property, so also is love. I give it, I donate it, I squander it merely because it makes me happy. Earn it if you believe you have a right to it. The measure of my sentiments can not be prescribed to me, nor the aim of my feelings determined. We and the world have only one relation towards each other, that of usefulness. Yea, I use the world and men." (Pp. 156-157.)

As to promises made and confidence solicited Stirner would not allow a limitation of freedom. He says: "In itself an oath is no more sacred than a lie is contemptible." Stirner opposes the idea of communism. "The community of man creates laws for society. Communism is a communion in equality." Says Stirner, "I prefer to depend

on the egotism of men rather than on their compassion." He feels himself swelled into a temporary, transient, puny deity. No man expresses him rightly, no concept defines him; he, the ego, is perfect. Stirner concludes his book: "Owner I am of my own power and I am such only when I know myself as the only one. In the only one even the owner returns into his creative nothingness from which he was born. Any higher being above, be it God or man, detracts from the feeling of my uniqueness and it pales before the sun of this consciousness. If I place my trust in myself, the only one, it will stand upon a transient mortal creator of himself, who feeds upon himself, and I can say,

"Ich hab mein Sach' auf nichts gestellt."
"In nothingness I placed my trust."

We call attention to Stirner's book, "The Only One and His Ownhood," not because we are overwhelmed by the profundity of his thought but because we believe that here is a man who ought to be answered, whose world-conception deserves a careful analysis which finally would lead to a justification of society, the state and the ideals of right and truth.

Society is not, as Stirner imagines, an artificial product of men who band themselves together in order to produce a state to the benefit of a clique. Society and state, as well as their foundation the family, are of a natural growth. All the several social institutions (kind of spiritual organisms) are as much organisms as are plants and animals. The cooperation of the state with religious, legal, civic and other institutions, are as much realities as are individuals, and any one who would undertake to struggle against them or treat them as nonentities will be implicated in innumerable struggles.

Stirner is the philosopher of individualism. To him the individual, this complicated and fluctuant being, is a

reality, indeed the only true reality, while other combinations, institutions and social units are deemed to be mere nonentities. If from this standpoint the individualism of Stirner were revised, the student would come to radically different conclusions, and these conclusions would show that not without good reasons has the individual developed as a by-product of society, and all the possessions, intellectual as well as material, which exist are held by individuals only through the assistance and with the permission of the whole society or its dominant factors.

Both socialism and its opposite, individualism, which is ultimately the same as anarchism, are extremes that are based upon an erroneous interpretation of communal life. Socialists make society, and anarchists the individual their ultimate principle of human existence. Both are factors and both factors are needed for preserving the health of society as well as comprehending the nature of mankind. By neglecting either of these factors, we can only be led astray and arrive at wrong conclusions.

Poor Stirner wanted to exalt the ego, the sovereign individual, not only to the exclusion of a transcendent God and of the state or any other power, divine or social, but even to the exclusion of his own ideals, be it truth or anything spiritual; and yet he himself sacrificed his life for a propaganda of the ego as a unique and sovereign being. He died in misery and the recognition of his labors has slowly, very slowly, followed after his death. Yea, even after his death a rival individualist, Friedrich Nietzsche, stole his thunder and reaped the fame which Stirner had earned. Certainly this noble-minded, modest, altruistic egotist was paid in his own coin.

Did Stirner live up to his principle of ego sovereignty? In one sense he did; he recognized the right of every one to be himself, even when others infringed upon his own well-being. His wife fell out with him but he respected

her sovereignty and justified her irregularities. Apparently he said to himself, "She has as much right to her own personality as I to mine." But in another sense, so far as he himself was concerned, he did not. What became of his own rights, his ownhood, and the sweeping claim that the world was his property, that he was entitled to use or misuse the world and all mankind as he saw fit; that no other human being could expect recognition, nay not even on the basis of contracts, or promises, or for the sake of love, or humaneness and compassion? Did Stirner in his poverty ever act on the principle that he was the owner of the world, that there was no tie of morality binding on him, no principle which he had to respect? Nothing of the kind. He lived and died in peace with all the world, and the belief in the great ego sovereignty with its bold renunciation of all morality was a mere Platonic idea, a tame theory which had not the slightest influence upon his practical life.

Men of Stirner's type do not fare well in a world where the ego has come into its own. They will be trampled under foot, they will be bruised and starved, and they will die by the wayside. No, men of Stirner's type had better live in the protective shadow of a state; the worst and most despotic state will be better than none, for no state means mob rule or the tyranny of the bulldozer, the ruffian, the brutal and unprincipled self-seeker.

Here Friedrich Nietzsche comes in. Like Stirner, Nietzsche was a peaceful man; but unlike Stirner, Nietzsche had a hankering for power. Being pathological himself, without energy, without strength and without a healthy appetite and a good stomach, Nietzsche longed to play the part of a bulldozer among a herd of submissive human creatures whom he would control and command. This is Nietzsche's ideal, and he calls it the "overman."[3]

[3] The translation "superman" is a solecism, for it is unnecessarily a com-

Here Nietzsche modified and added his own notion to Stirner's philosophy.

Goethe coined the word "overman" (*Uebermensch*) in German and used it in the sense of an awe-inspiring being, almost in the sense of *Unmensch,* a man of might without humanity, whose sentiments are those of Titans, wild and unrestrained like the powers of nature. But the same expression was used in its proper sense about two and a half millenniums ago in ancient China, where at the time of Lao-tze the term *chün jen* (君人), "superior man," or *chün tze,* "superior sage," was in common usage. But the overman or *chün jen* of Lao-tze, of Confucius and other Chinese sages is not a man of power, not a Napoleon, not an unprincipled tyrant, not a self-seeker of domineering will, not a man whose ego and its welfare is his sole and exclusive aim, but a Christlike figure, who puts his self behind and thus makes his self—a nobler and better self—come to the front, who does not retaliate, but returns good for evil,[4] a man (as the Greek sage describes him) who would rather suffer wrong than commit wrong.[5]

This kind of higher man is the very opposite of Nietzsche's overman, and it is the spirit of this nobler conception of a higher humanity which furnishes the best ideas of all the religions of the world, of Lao-tze's Taoism, of Buddhism and of Christianity. Stirner in his personal life is animated by it, and, thinking of the wrongs which the individual frequently suffers in a bureaucratic state through red tape and unnecessary police interference and other annoyances, he preaches the right of the individual and treats the state as non-existent—or rather as a spook, an error which exists only because our spleen endows it with

bination of the Latin *super* and Saxon *man.* Say "superhuman" and "overman" but not "overhuman" nor "superman."

[4] *Lao-tze's Tao Teh King,* Chaps. 49 and 63.

[5] For a collection of Greek quotations on the ethics of returning good for evil, see *The Open Court,* Vol. XV, 1901, pp. 9-12.

life. A careful investigation of the nature of the state as well as of our personality would have taught Stirner that both the state and the individual are realities. The state and society exist as much as the individuals of which they are composed,[6] and no individual can ignore in his maxims of life the rules of conduct, the moral principles, or whatever you may call that something which constitutes the conditions of his existence, of his physical and social surroundings. The dignity and divinity of personality does not exclude the significance of superpersonalities; indeed the two, superpersonal presences with their moral obligations and concrete human persons with their rights and duties, cooperate with each other and produce thereby all the higher values of life.

Stirner is onesided but, within the field of his onesided view, consistent. Nietzsche spurns consistency but accepts the field of notions created by Stirner, and, glorying in the same extreme individualism, proclaims the gospel of that individual who on the basis of Stirner's philosophy would make the best of a disorganized state of society, who by taking upon himself the functions of the state would utilize the advantages thus gained for the suppression of his fellow beings; and this kind of individual is dignified with the title "overman."

Nietzsche has been blamed for appropriating Stirner's thoughts and twisting them out of shape from the self-assertion of every ego consciousness into the autocracy of the unprincipled man of power; but we must concede that the common rules of literary ethics can not apply to individualists who deny all and any moral authority. Why should Nietzsche give credit to the author from whom he drew his inspiration if neither acknowledges any rule which he feels obliged to observe? Nietzsche uses Stirner as Stirner declares that it is the good right of every ego to use his

[6] See the author's *The Nature of the State*, 1894, and *Personality*, 1911.

fellows, and Nietzsche shows us what the result would be —the rise of a political boss, a brute in human shape, the overman.

Nietzsche is a poet, not a philosopher, not even a thinker, but as a poet he exercises a peculiar fascination upon many people who would never think of agreeing with him. Most admirers of Nietzsche belong to the class which Nietzsche calls the "herd animals," people who have no chance of ever asserting themselves, and become hungry for power as a sick man longs for health.

Individualism and anarchism continue to denounce the state, where they ought to reform it and improve its institutions. In the meantime the world wags on. The state exists, society exists, and innumerable social institutions exist. The individual grows under the influence of other individuals, his ideas—mere spooks of his brain—yet the factors of his life, right or wrong, guide him and determine his fate. There are as rare exceptions a few lawless societies in the wild West where a few outlaws meet by chance, revolver in hand, but even among them the state of anarchy does not last long, for by habit and precedent certain rules are established, and wherever man meets man, wherever they offer and accept one another's help, they cooperate or compete, they join hands or fight, they make contracts, they cooperate, and establish rules and the result is society, the state, and all the institutions of the state, a government, the legislation, the judiciary and all the intricate machinery which regulates the interrelations of man to man.

P. C.

BECOMING.

[Intimate friends of the late Major John Wesley Powell know that he was not only an anthropologist of high standing, an organizer and a born executive, a chief, educator and a reformer, for which qualities the University of Heidelberg conferred upon him the unusual honor of a doctor's degree, but that he also was a poet. In a former number of *The Monist* (Vol. V, No. 3) we published his poem on "The Soul," and we here insert another poem which describes evolution under the title "Becoming."]

OLD RIDDLE.

In marble walls as white as milk,
All lined with skin as soft as silk,
A golden apple doth appear,
In ambient bath of crystal clear.
There are no portals to behold,
Yet thieves break in and steal the gold.

SONG.

Island of beauty encircled
With girdle of filigree wave
Woven by tempest of ocean
Where tide follows moon as a slave—
Dream of my childhood, I love thee,
The home of my ancestors brave.

Glorious oak on the island
That stands by my forefather's home,
Down where the breakers are roaring,
Becrowned with their beautiful foam,
Why from thy shade have I wandered,
In turbulent regions to roam?

Musical robin of greenwood,
With bosom in blushes agleam,
Ever your memory haunts me
In moment of silence supreme,
Borne from the scenes of my childhood,
To revel in many a dream.

THE ISLAND.

The sands of hill an island may become;
For summer shower gathers them in rills,
The brook receives them, bears them on to creek,
Which gives to river, it to ocean vast,
And then beneath the waves the sands are stayed—
An island egg in nest of sea is laid.

The island germ is fed by every rain
That falls among the hills where rivers run;
More sands from year to year and age to age
Come down with rains that fall from roaring storms
That ever ride on air from sea to land,
Until through waves there bursts an island grand.

THE OAK.

A seed a giant tree at last becomes;
For, planted well in soil of ocean's isle,

A treelet bourgeons from the acorn's heart,
Which penetrates the earth with hungry roots
And stretches arms to reach vivific light,
Its leaves in love with day, its roots with night.

And many a storm the creeping rootlets feed,
And many a zephyr caters deft to leaves,
And many a sunbeam leaves the orb of light
In journey swift past meteor and cloud
To marry crystal drops of summer rain
With yearning molecules of southern breeze,
Until as oak the treelet vies with pine
And bears in sturdy arms the pendent vine.

THE ROBIN.

An egg with turkis spots a robin holds:
The germ, sequestered safe in marble walls,
Is warmed to life by mother's tender care,
Who gathers crumbs from cottage tables cast
And fruit from meadow, copse, and forest tree.
The nestling, sconced in honeysuckle home,
Is neophyte that yet must learn to roam.

On welcome store of food the birdlet grows,
Evolving fingered feet with clasping skill
To perch upon the blossom-bearing bough,
With wings to hover over land and sea,
And eyes to revel far in scenes of light,
And tongue to give a loving mate delight.

THE LESSON.

The bird that sings on island tree,
The tree that stand on ocean's isle,

The isle that sleeps in boundless sea,
Forever poet's thought beguile.
O, beautiful isle, O, glorious tree,
O, musical bird, teach wisdom to me!

The word of truth is this they give to him
Who ponders well the meaning deep of world:
What is ne'er was, and will not be again;
What is becomes by increments minute,
And wondrous transformation is performed—
The hills dissolve, an island grows apace;
From storm and air the seed becomes a tree;
While atoms join to make the bird so fair,
The robin-redbreast, flying through the air.

THE COMING OF ISLANDS.

O, beautiful isle of the sea—
Embraced in its billowy arms,
Caressed by its pulsating tides
And kissed by its tremulous waves
And fed by the rivers of land—
Your life is the wine of the land!

The isle that gems the shore shall mainland be
And tide-swept bank shall mountain summit crown,
Plateau shall be submerged as ocean floor,
And lofty peak beneath the deep sea sink,
In sure obedience to cosmic force
As alternating generations come,
When land to sea and sea to land gives birth,
Evolving continental forms of earth.

THE COMING OF TREES.

O, glorious tree of the isle—
Upborne on its wave-beaten breast,
Caressed by the matinal wind
And kissed by the vesperine breeze
And fed by the nourishing storm—
Your life is the wine of the storm!

In long procession through the æons come
The arborescent generations vast,
Evolving with the many forms of land;
The fit to life, unfit to death consigned;
In adaptation yielding everywhere—
With sweet consent in zones of tempered wind,
With lusty growth where tropics ardent woo,
And gnarled conformity to arctic storms—
Till earth is clothed with multitudinous forms.

THE COMING OF BIRDS.

O, musical bird of the tree—
Becradled on pendulous bough,
Caressed by the bountiful leaves
And kissed by the odorous flowers
And fed on the beautiful fruit—
Your life is the wine of the fruit!

Then tribes of birds adown the ages come,
In generations numbered like the years,
With fitting kind for every habitat
For such as win sweet life by high emprise
With winged endeavor, giving form and skill

In flight from tree to tree and clime to clime,
While groves and sky are filled with music sweet—
A vast inheritance of plume and song,
Evolving as the ages course along.

THE NEW CREATION.

To him who lingers e'er on narrow shore
Nor heights of land nor depths of sea are known;
For pleasure's flotsom, tossed on folly's foam,
With flow and ebb of purpose strong and weak,
Forever chafes the marge of common life,
While days and years pass on in weary strife.

The wise man goes beyond the seeming thing—
The rocks and shoals of hither shore of cause—
Abroad on strandless, wide, unfathomed sea
Of being, doing, and becoming world,
And, borne afar by sail of thought, he learns
That new creation which the prophets saw
Is cryptic growth of universal law.

SONG.

All islands encircled by murmuring sea,
All trees that are clustered in musical grove,
All birds of the forest that joyfully sing,
A tale of becoming in harmony bring.

In bed of the sea is the nest of the isle,
In heart of the isle is the nest of the tree,
In arms of the tree is the nest of the bird,
And voice of the nestling in music is heard.

The cantion they warble on morn of their birth,
Continued as daybreak encircles the earth,
While longitudes wheel to the matinal light,
Is heard as the æons proceed in their flight.

From croak of the frog to the voice of the lark,
From creeping of reptile to soaring of bird,
The way of becoming is long, very long—
The wonderful theme of their matinal song.

We come, O we come down the mystical years,
Unreckoned in lore of the sages and seers,
Through bundles of ages, as time gathers sheaves,
We come like the army of vernal-tide leaves.

CRITICISMS AND DISCUSSIONS.

THE REVELATION OF PRESENT EXPERIENCE.

Dr. Edmund Montgomery, the hermit philosopher of Liendo plantation, has written another book[1] which contains in a popular form the gist of his philosophy. Instead of reviewing this book we prefer to let Dr. Montgomery speak in his own words. He may be characterized as a scientific mystic who stands in awe at the mystery of existence and especially of organized life. He devotes much space to the vexatious problem of idealism and realism. He opposes religious superstitions; he rejects them and yet favors a teleological interpretation of nature and bases his monism upon a mental substance as ultimate reality. The extracts of his views are here given in his own words:

"It is safe to say that the world-revelation contained in the present experience of cultured man is most consistently and positively recognized by help of the collective results attained in the various provinces of scientific research. It is relevant, then, to inquire what sort of general survey our scientifically enlightened thinking is at present justified in constructing on the strength of this newly acquired information. (Page 1.)

"The physical medium in which all life is carried on is apparently the same for animals as for man, yet in man it has become transfigured into a supersensible world of transcendent import. (5). To get to understand the gradual formation and memorized fixation of the latent content of our conscious microcosm is a more fundamental task than the mere analysis of this content, when it becomes manifest in actual awareness ready-made. (6).

[1] *The Revelation of Present Experience.* Boston: Sherman French & Co., 1910. His large work, *Philosophical Problems in the Light of Vital Organisation,* was discussed at length in *The Monist,* XIX, 582. Since this review was written Dr. Montgomery passed away on April 17 at his home on the Liendo Plantation near Hempstead, Texas. For further particulars of his life and death see *The Open Court* of June, 1911, p. 381, and *The Monist* of October 1909, p. 582.

"A flame may to some slight extent illustrate the true nature of consciousness. A flame, as visual phenomenon, is the fleeting but sustained result of the process of combustion. Consciousness, as sentient phenomenon, is the fleeting but sustained result of the process of vital organization. In order to sustain the flame entirely new amounts of combustible raw-material have to be supplied. In order to sustain consciousness the integrity, and therewith the efficiency of vital organization has to be maintained by assimilation of new complemental material. A flame, as visual phenomenon, is itself a forceless outcome of the process of combustion. Consciousness, as a sentient phenomenon, is a forceless outcome of the process of vital organization. The visual flame, an ideal product of real combustion, illuminates into present awareness the manifold content of the field of vision. Consciousness, an ideal product of real vital organization, resuscitates in present awareness the manifold latently preserved and memorized content of past experience, as guidance for present and future actions. (7-8).

"Grossly insufficient as it will sound, life, as merely physically or perceptually revealed, consists in a specific cycle of motions maintaining the constitution and vitality of the living substance of which all organisms are composed. This specific cycle of motions is set going by definite stimulating influences that impinge from outside upon the highly complex and mobile chemical compound, disintegrating it to some extent. Whereupon the disintegrated substance reintegrates itself from within by force of indwelling affinities. Chemically expressed, it resaturates itself by combining with complemental material afforded by the medium. Whenever and wherever on our Mother Earth this process of alternate disintegration and reintegration has taken place in ever so rudimentary a manner in what proves to be an integrant chemical compound, there life has originated. It has not fallen from the skies as a creation ready-made. Nor has a separate vitalizing imponderable principle seized upon ponderable material and coerced it into structural arrangements, imparting to it the endowments and efficiencies displayed by organisms. The unfathomable awe-inspiring mystery attaching to life in its multitudinous manifestations lies altogether in the intrinsic endowments mysteriously accruing to it in ever heightened modes of efficiency accompanying its structural development. Surely a creative result most mysteriously attained. (9-10).

"It is a chimerical expectation to think that one can ever arrive at a valid interpretation of organic life in its relation to the environ-

ment and the world at large, either by viewing the whole as consisting exclusively of mental modes, generally conceived as a system of self-evolving concepts, or as a conglomeration of self-associated sensations; or on the other hand, by viewing the whole as a combination of mere material configurations consisting of aggregated atoms mechanically actuated.

"Idealists deceive themselves with words when they believe they can consistently account in mental terms for any fact or occurrence of perceptible nature. (12-13).

"Naturalists, on the other hand, look upon living organisms as mere intricate mechanical contrivances, constructed out of ordered aggregations of inert material particles, and being set going by imparted modes of motion; to such mechanistic and materialistic naturalists the apparently astounding activities of these definitely grouped arrangements of material elements or so-called organisms, are really nothing but unwilled motor-performances of the material mechanism, running their course wholly independent of the accompanying psychical by-play. (15).

"The utter insufficiency of this view comes, however, glaringly to light when living organisms are held to be composed of inert material particles actuated by imparted motion or transferred energy. (16).

"It is almost cruel, moreover, to remind the advocates of the physical theory of biological occurrences, that during their occupation with these materialistic and mechanistic explanations, they lose sight of their own mentally guided and mentally cognizing activities, which alone enable them to apprehend and conceive what they consider to exist and to occur outside their own perception and conception. Evolving the logical consequences to which their mechanistic views necessarily lead, they can find no legitimate way of reaching mind or consciousness in general, and therewith no way to the very consciousness within which their own reality-depleted conception of organic life has its exclusive existence. Such downright *reductio ad absurdum* of the purely mechanical conception of life and nature in general would deserve to evoke Homeric laughter, if it had not, in physics at least, proved pragmatically so exceedingly fruitful in the cause of enlightenment and liberation from gross superstitions.

"Employed as a working hypothesis in the precise investigation and exact discrimination of sense-revealed natural occurrences, with no pretentions as regards a true and valid interpretation of their

real nature, physical science has claims on our gratitude and admiration that surpass all estimates. (18-19).

"It is evident that without an extra-conscious matrix, which latently preserves past experience, no conscious content whatever would arise into actual awareness. Pure idealism would then have no world-revelation as subject-matter to idealistically interpret.... In fact every kind of idealism derives its entire content from that extra-conscious source. (22).

"The consistent materialistic and mechanistic view excludes from its interpretation of nature all participation of modes of conscious awareness as superfluous epiphenomena, which merely accompany but nowise influence what causatively and necessarily happens in a world of moved matter. The consistent idealistic view, on the other hand, denies altogether the existence of an extra-conscious physical or perceptible world. Physics, then, has no room for mind: psychics no room for matter. In modern times, ever since Descartes bisected nature trenchantly into an extended material substance and an unextended thinking substance, this dualism of matter and thought, of body and mind, has given rise to no end of philosophical perplexities, until weary of so much contention, physicists as well as psychists found rest at last in the hypothesis of psychophysical parallelism.

"Although an unsatisfactory compromise, it has to be conceded that by trusting to the materialistic horn of the psychophysical dilemma the great advantage is gained of looking upon perceptible objects and occurrences as existing in all reality in an external world independent of being perceived, allowing them, moreover, to be accurately described, measured, and their invariable connections positively ascertained, so that by these definite signs they can at all times be discriminated as positively recognized realities. (25). Trusting, on the other hand, to the lead of the idealistic side of the psychophysical dilemma, one reaches the incontestable fact that all subjective or individual experience consists of mental phenomena; that therefore all physical knowledge, however positive and reliable, turns out to be after all wholly a mental possession made up of specific percepts and concepts. Philosophically speaking, the perceptible world is being apparently entirely absorbed by mind. (26).

"Now as neither materialism nor idealism can account for memory, but has nevertheless to invoke its aid in order not to remain void of content, the fundamental task of philosophy and science is epistemologically to demonstrate the existence of the real permanent

matrix which latently harbors preserved and memorized past experience. Such desiderated matrix has to be positively shown to constitute a real substance. And under real substance is philosophically and scientifically understood an entity which maintains its own identity and efficiency unimpaired, while producing or emitting a sustained manifestation of natural phenomena, being in fact the proximate source of the becoming of conscious appearances. In Kant's words: "In it (substance) alone is to be sought the seat of the fruitful source of the appearances.' (27).

"Idealism, admitting but one single- all-inclusive mental content, has even boldly to deny the independent substantial existence of individual human beings. This denial of our self-existence is rather a serious matter that closely concerns all of us, as it has been virtually the cause of no end of fanatical nature-perverting beliefs and practices. (29).

"The only mental or ideal existence we are actually aware of is the all-revealing conscious content, and this has as such obviously no power whatever to forcibly affect the outside world, and to make itself directly known to any outside percipient. Fancy you and me to be pure ideal or spiritual beings, or for that matter to be the mere flesh and blood perceptible beings we really are. It is a positive fact that anyway we can nowise become directly aware of, nowise perceive the content of our respective consciousness. (30).

"But if human beings do not consist of mental or ideal stuff, nor of what is held to be material stuff, of what do they really consist? They evidently consist of non-phenomenal, substantial stuff that has power to compel to arise in the conscious content of beholders their symbolical representation, and that contains latently preserved a vast store of memorized past experience. Their presence and their superficial characteristics become revealed by means of percepts mostly visual and tactual. Their sundry activities are made known by means of definite motions of these percepts. All this information, minutely serviceable as it is, consists only of emblematic signs. To gain a somewhat adequate idea of how profoundly the real human being's nature remains enigmatic in this mere perceptual revelation let us imagine that within the conscious content of an observer the bodily percept of another human being visually arises, sense-compelled. Nothing has affected the observer's vision save a specifically constituted impingement of what are called ethereal vibrations. Thereupon within his subjective sphere of special luminosity a definitely shaded and colored form makes its appearance,

which is recognized as representing a human being. Noticing the characteristics, features and motions of the visually aroused apparition within his conscious content the observer interprets the significance of these perceptual signs entirely by means of his own intrinsically gathered and memorized experience, supplementing what is essentially implied by the signalized vision. He himself, by dint of his own mental endowments, fills the empty visual form with as much or as little meaning as his own introspective experience allows. (31-32).

"The real human being has been shown to be a perceptible, power-endowed, extra-conscious entity, that compels through sense-stimulation—mostly of a vicarious character—a perceptual representation called his body to arise in the conscious content of beholders. This real human being is thus revealed to the actual awareness of outsiders solely by means of this perceptual bodily appearance. To himself the awareness of this visual and tactual body is likewise a mere perceptual, sense-aroused appearance within his own conscious content. (35).

"The animal (is) developed into a human being by the acquisition of speech, engendered in social intercourse....Without the use of linguistic signs conceptual thinking is impossible....and rational conduct is rendered mentally possible by memorized past experience, consciously apprehended (37-41).

"Life had a most humble mundane beginning in a mere see-saw movement of alternate disintegration from without, and reintegration from within, manifest in the perceptually revealed primitive living substance....Hunger and assimilation of restitutive nutriment on the part of the organic individual would secure only its own preservation, and life would have become extinct on our globe in a single generation—fulfilling thereby without much ado the fervently professed desire of the ascetics. This would infallibly have happened of the process of the creative development of vital endowments, to which we owe our own existence, did not involve the 'wicked' propagation of 'sinful' individuals, and therewith the preservation of the 'fallen' race. (50-51).

"What is so strikingly witnessed in the circumscribed life-history of insects, namely, that their entire vital activity, from beginning to end of their career, is directed toward the propagation of their race; a predetermined reproductive end-result arrived at unbeknown to themselves—this unmistakably teleological process affords a certain analogical insight into what productively occurs in phyletic organic

development. (55)....The world as revealed in the symbolical medium of sentiency and consciousness is obviously a new creation; something newly arising into perceptual existence. It has become toilsomely embodied in what perceptually appears as specifically organized vital structure. (56).

"The principal results in the scientifically valid interpretation of the perceptible world-revelation have been gained by close observation and exact numerical determination of the behavior of the sense-compelled appearances arising within the conscious content of the observer. These appearances faithfully, though only symbolically, reflect what really happens in the sense-compelling, extra-conscious world. Consequently such scientific interpretation of phenomenal appearances, however exact, can yield only phenomenalistic information in terms of extension and motion. The intrinsic significance of the perceptual appearances and their motor changes has to be supplied by the experiencing subject's own organically memorized and systematized knowledge. (59).

"Rational enlightenment, mostly scientifically attained, has liberated progressive nations from many terrifying and pitiless superstitions, also from the former thraldom of utmost intolerance, which mercilessly inflicted the cruelest penalties on unbelievers in the tenets of this or that dominant theological creed. In order entirely to overcome the injurious and unjustifiable anthropomorphic conception of a creative power, volitionally and intentionally in control of all that happens in nature, it will be well to get to understand that our own will and our own intelligence, which are obviously the real prototypes upon which are patterned the will and intelligence ascribed to a postulated deity, are utterly powerless to impart or change under given conditions any property or mode of behavior of the interacting constituents of the cosmic order and its procedure. (68)....In the fashioning of organisms the surpassing incomprehensibility of creative might is most strikingly evinced. (70).

"On the whole the conviction has preponderated that true reality is revealed by conception and not by perception. The consistent outcome of this prevalent persuasion is that the real world is of ideal consistency, and has its real being in mind, consciousness or spirit. (75)....What are called laws of thought, often looked upon as super-humanly normative, receive no less their validity from vitally organized correspondence of conceptual thinking to what such thinking applies to. (86).

"What is deemed objective in nature, or above it, is not directly

given in experience, but only inferred from certain actually given subjective data within the conscious content. It is obvious, then, that subjectively revealed spacial forms, for instance, inferred to have their real existence in an objective extra-conscious world, have of necessity to conform to subjective space-perception, of which they are—as thus actually experienced—sense-compelled determinations. (87-88).

"In cultured communities, social conduct and social development have become the chief concern of humanized existence. (90).... And here justice and benevolence reveal themselves as the leading principles that make for progressive humanization, and for realization of the social ideal. This ideal of social solidarity is conceived as a state, in which all humanity is imagined to share in the benefactions of a rationally and ethically cultured life. (91)

"Liberty, Equality, Fraternity are sublime watchwords to steadfastly remind us of the far-off humanitarian goal. But that goal cannot be reached before a great majority of individuals composing the social community have constitutionally attained a degree of humanization that renders them socially congenial and capable of consistently performing the duties involved in the realization of the ideal state" (92).

THE CHRIST MYTH OF DREWS.

The object of this book[1] is to prove that the Jesus Christ of Christianity is a pre-Christian Hebrew sun- and fire-god by the name of Jesus, identical with Joshua, Elijah, John the Baptist and other assumed Hebrew forms of these gods, whom the writers of the New Testament transformed into a human being, represented as having lived in the first century of our era under the name of Jesus, though such an historical Jesus never existed.

In order to prove that there was such a pre-Christian God the author presents to the reader, especially in the first part "The pre-Christian Jesus" but also in the second part "The Christian Jesus", an enormous amount of information and material taken from the comparative study of ancient religions. The facts given in this way will be of great value even to the reader who can not follow the author in the final conclusions he draws from them, for they show how many different pre-Christian conceptions and ideas, mythical,

[1] *The Christ Myth.* By Arthur Drews. Translated from the third edition (revised and enlarged) by C. Delisle Burns. Open Court Pub. Co., 1910.

mystical, ritualistic, sacrificial, speculative, etc., from Pagan and Jewish sources entered into the formation of the Christian Christ-idea. Whether we follow the author or not in his final conclusions, we must fully agree with him that the Christ myth, the idea of a dying and risen saviour-god who brings life and immortality out of death, is rooted deeply and firmly in the many pre-Christian ideas of the kind just mentioned and is a natural outgrowth of them.

The author shows that Parseeism influenced Judaism deeply in regard to the Saviour and Messiah idea; that even far distant India may have furnished material both from the side of Vedic and Buddhistic religion; that other religions of antiquity such as those of ancient Babylonia and Egypt furnished the same idea, though in different ways, of the dying and resurrected god, at bottom the yearly waning of the sun and the death of vegetation either by winter in more northern, or by the dry season in more southern climates and its revival in the spring; he shows also that the actual human sacrifices, in order to assist nature in its revivification, or the bloodless imitation ceremonies in connection with the early festivals of the dying and resurrected god, entered into the idea of the Christian Christ; he shows that much mythical, mystical and speculative language of exactly the same terms in Mithraism, Mandaeism and other cults entered into the religious language of Christianity regarding its Christ and the relations of believers to him; he shows the influence of Parsee, Vedic, Buddhistic and Greek metaphysical thought in the formation of Christian metaphysical ideas, the idea of the divine wisdom, the divine word or the Logos, standing as a mediator between the far-away God and his creation, a kind of emanation or sonship of God becoming incarnate; he shows that Christianity in fact furnished nothing new whatever in the ethical sphere and that the highest moral thought of Christianity is to be found previously both in Judaism and paganism; that the picture of the ideal, perfect, just, suffering man, as we have it in Christianity, is furnished likewise by Plato and Seneca; he shows that the ideas of the union of man with God through sacred rites, baptism, sacred meals, etc., such as we have in Christianity, were deeply rooted in pre-Christian customs; he shows how strong was the pre-Christian idea of propitiatory death, in that even the death of martyrs dying for their religion as in the Maccabean insurrection was considered redemptive for the whole people; in short the author furnishes in a very skilful way such an enormous amount of valuable material showing what a host of different ideas entered into

the formation of Christianity to make it a thoroughly syncretic religion, that the reader is fully repaid thereby for acquiring the book.

The writer of *The Christ Myth* might have added other strong arguments for the syncretical character of Christianity and its outgrowth from previous thought. When speaking of Philo and his influence upon the Fourth Gospel he might have shown how the letter to the Hebrews is still more thoroughly impregnated by Philo even to exactly the same terminology. When speaking of the dying and resurrected gods of pre-Christian religions and the effects of this thought upon the ancient human mind, he might have shown still more strikingly that this idea of the dying and rising god, referring originally only to processes of nature, was transferred into the purely spiritual and religious sphere. He might have referred to the Egyptian burial liturgy in which occur the following words regarding the deceased: "Not as dead does he go away, but as living; as true as Osiris lives, he also will live; as true as Osiris has not died, he also will not die; as true as Osiris has not been destroyed, he also will not be destroyed." (If instead of "Osiris" we place "Christ" we have a fully Christian burial liturgy). He might have referred to the words of the priest in the Greek mysteries at the height of the mystical cult:

> "Be confident, initiates, the God is saved,
> And also we from sufferings will be saved."

If it had been more in the interest of the author of *The Christ Myth,* he might also have stated how much of the mythical matter related of the assumed god Jesus, and god-forms identical with him, was also related of historical persons. He might have pointed to the fact that not only Plato, Augustus and others were said to have been divinely-begotten sons of virgins, but that exactly the same story told of Joseph, the father of Jesus, is told of the father of Plato, who did not consummate the marriage with Plato's mother till after the child's birth; that a star appeared at the birth of Augustus and great signs preceded the death of Cæsar; that the Roman senate attempted to prevent the birth of Augustus; that in the apotheosis of a Cæsar witnesses were required to appear before the senate to testify that they had seen the soul of the emperor ascend to heaven; that at the birth of Apollonius of Tyana a chorus of swans sang; and that as late as in the Middle Ages the story of the dying and resurrected god was transferred to Frederick I, Barbarossa, who was to arise and bring again the glory of the old empire.

While, as has been said, the author of *The Christ Myth* places before the reader an enormous amount of valuable material for which we must be grateful, I think exception must be taken to the way in which he states certain assumptions and theories as facts which as yet lack definite proof. For instance, if the author accepts as a basis for his thesis the theories of Winckler and others, that all the heroes of the early Old Testament history from Abraham down to Elijah, and perhaps even further, are nothing but astral, zodiacal, solar and lunar gods, the reviewer in company with many others is willing to yield to this theory to a certain extent, as in the case of Samson where the solar characteristics are clear, even in the name itself (*Shimshon*, "the solar one"). Nevertheless he thinks it would be more cautious and in accordance with facts to assume that, as in the case of the Iliad, Odyssey and the Nibelungenlied, there may likewise be in early Hebrew history a mixture of the purely mythical and historical, nature-myths and early tribal and national history, in which it is sometimes very difficult to separate the purely mythical from the historical characters.

The Joshua (Greek *Jesus*) of the conquest of Canaan may have been a tribal sun-god, but the high priest Joshua who appears in the books of Zechariah and Ezra was surely no god. Likewise, if the Joshua of the conquest was a god, all consciousness of the fact was lost and he was considered an historical person (see 1 Kings xvi. 34), at least during the times of the Exile. Even in the eighth century B. C., as we can gather from such old prophets as Amos, Hosea and Micah, the history of the conquest as we find it in the Pentateuch and the Book of Joshua was accepted. Micah vi. 7 speaks of Moses, Aaron and Miriam (the latter of whom Drews erroneously considers a sister of Joshua, see page 117) as historical persons, not as gods.

The patriarch Joseph may likewise have been a tribal sun-god, but it is very questionable whether when the Gospels represented Jesus as a son of the carpenter Joseph, a myth was still known, if ever such a one existed, relating that this sun-god Joseph was an artisan, i. e., a "world modeller" (p. 114) as in the case of the father of Agni, the god of fire, and Kinyras, the father of Adonis, where the sun-myth is entirely transparent.

If Elijah is a sun-god, his contemporary Ahab at least is historical and well attested by the Moabite stone. Elijah appears to me rather to be a genuine Oriental religious zealot. The miracles related of him and his final fiery ascension to heaven do not disprove

his historical character. Similar things are related of Mohammedan marabouts even to-day, and the miracles told about Empedocles, a character somewhat similar to Elijah in his stand against the mighty and his marvelous end, do not stamp him therefore as unhistorical. Further, to connect Elijah etymologically with *Helios* (sun) will only appeal to those ignorant of ancient languages and philological laws. And finally Elijah has played an important rôle as an historical prophet in Jewish literature, in the Gospels and the Talmud in connection with the Messianic hopes ever since Malachi iv. 5.

John the Baptist is to Drews another form of the sun-god. As he does not occur in the Old Testament, "under the name *Johannes* is concealed the Babylonian water-god *Oannes* (Ea)," another form of the sun-god, i. e., "the sun begins its yearly course with a baptism, entering after its birth the constellation of the Water-carrier and the Fishes" (p. 122).

As John the Baptist occurs in Josephus (*Ant.* XVIII, 5, 2) this passage is declared a Christian interpolation on the authority of the Jewish writer Graetz, though his authority is rejected when declaring the *Vita Contemplativa* of Philo a Christian forgery (p. 51). Whether Graetz declared the Baptist passage an interpolation because he considered John unhistorical is not said, nor is an appeal in this connection to a note in Schürer (*Geschichte des jüdischen Volkes*, etc.) more illuminating. I have read Schürer on Josephus in Herzog and Plitt's latest edition and find in his discussion of interpolations in Josephus not the least word on the passage of the Baptist. I am sure that to Schürer John is historical.

We ought to be extremely careful in declaring passages interpolated. Preconceived theories ought not to influence our judgment in this respect in the least. No one has a right to declare passages interpolated unless on the fact that they are wanting in some manuscripts, or on grounds which thoroughly show that they are imported foreign matter. If the passage on the Baptist (known to Celsus before 180) is a Christian interpolation, the interpolator must have been entirely ignorant of the accounts about the Baptist in the Gospels, for these contradict the Josephus passage in many respects and are written from an entirely different viewpoint.

In connection with John the Baptist the philology regarding the river Jordan[2] will again only appeal to those who base comparative philology on the similarity of sounds instead of on scientific prin-

[2] "*Eridanus*, the heavenly Jordan or year-stream (Egyptian *iaro* or *iero*, the river)" (p. 122).

ciples. This kind of philology occurring in so many places in *The Christ Myth* is one of the weakest points in the book and ought to be removed in future editions. Likewise if the method were correct that Drews applies to Hebrew names in which the word *El* (God) occurs, not one of the host of names for persons in the Old Testament containing *El* would signify a human being, but each would signify a god. (Compare on page 77: "*Israel,* the mighty God," "the earliest designation of the God of the Hebrews until displaced by Yahveh." A very questionable assertion!) Likewise, according to the same method, if all names for human beings, in which the syllable *jah* or *jeho* (abbreviation for *Yahveh*) occurs, would signify a god, there would be no end of such gods in the Old Testament. (Compare *Jehoshua* considered as a god.) It is to me extremely doubtful whether the very frequent names in the Old Testament in which the syllables *el* or *jah* or *jeho* appear would ever have been used for the designation of a god. According to the method applied by Drews we might with the same right consider Merodach Baladan, a king of Babylonia (Is. xxxix. 1) a god, but that name simply means "Merodach is ruler and lord."

It also seems to me incomprehensible that if Jehoshua were such a noted sun-god of the Hebrews we do not see the least trace or mention of his cult in the Old Testament or elsewhere in Jewish literature, while the cults of Tammuz, Moloch, Baal Peor, Cemosh and other gods, surely all different forms of the sun-god, are mentioned. But Drews furnishes direct proofs that Joshua or Jesus was a pre-Christian Hebrew god. Jesus is not only a sun-god but also a god of healing and saving (p. 58) identical with the Greek *Jasios* or *Jason,* i. e., "the healer," (another example of the weak philology of the book) and is mentioned as such in ancient documents. But Hebraists know that *Joshua* or *Jesus* means no such a thing as "healer" or "saviour." The Hebrew for "physician" is *rophe,*[3] and for "saviour" *moshia,*[4] a hiphil participial form of the verb *jasha,* often occurring in the Old Testament as an attribute of God, as in the Greek *Zeus Soter.*

But what about the ancient documents? In a Parisian magic papyrus published by Wessely (line 3119 etc.), we read the words, "I exhort thee by Jesus the God of the Hebrews." While Drews considers this papyrus to be of pre-Christian times, other scholars say that it appears to date from the first half of the fourth century A. D., and that if in it Jesus is called the "God of the Hebrews,"

[3] רפא — [4] מושיע

this does not necessarily point to a pre-Christian time but may just as well be due to Christian influence, in that Jesus is mistakenly conceived to be a god of the Hebrews by some conjurer; that just as the name of Solomon was made use of in conjurations (compare Josephus *Ant.* VIII, 2, 5) so the name Jesus was made use of not only by Christians but also by others who conceived his name to be powerful (compare Acts xix. 14).

The existence of the pre-Christian god Jesus is also assumed on the basis of another document. The great heresy expert Epiphanius (4th century A. D.) says in a very muddled way:[8] "Upon these follow in order the *Nazoraioi,* who belong to the same time as they and who, whether existing before them or with them or after them, nevertheless are their contemporaries; for I can no longer tell exactly who followed the others. For they were, exactly as I said, contemporaries and had similar thoughts. But they did not attribute to themselves the name of Christ or Jesus but that of the *Nazoraioi,* and all Christians then were called likewise *Nazoraioi.* But it happened a short time before that they were called *Jessaioi* before they began to call the disciples of Jesus in Antioch Christians. And they were as I think called *Jessaioi* on account of Jesse. They either were called *Jessaioi* after Jesse the father of David or after the name of Jesus our Lord, because they went out from Jesus as disciples or because this is the etymology of the name of the Lord. For Jesus means in Hebrew the same as *therapeutes,* i. e., physician and saviour. Before they were called Christians they were called by this name somehow as a surname. From Antioch as said above, they began to call the disciples and the whole church of God Christians, but some called themselves *Nasaraioi* for the heresy of the *Nasaraioi* existed even before Christ and did not know anything of him. But all called the Christians *Nazoraioi* as also the accusers of the apostle do."

From this passage and a few more words in the above-mentioned magical papyrus reading (line 1549): "I conjure you by the *marparkourith nasaari*" and from the mention of the words *Jesus Nazarja* in a hymn of the Naassene sect, Drews, following Professor William Benjamin Smith of Tulane University in all this, draws the conclusion that there were two pre-Christian sects called *Jessaioi* and *Nazoraioi* who were closely related to each other, if not abso-

[8] The following quotation from *Panar. Haer.*, XXIX, 6, is not given by Drews.

lutely identical (p. 59). They were so called from the divinity they adored, *Jesus Nasarja,* meaning the "saviour-protector."

To strengthen this assumption and the claim that the Christian sect of the *Nazoraioi* in the New Testament were not called thus from the home of Jesus, Nazareth, the existence of Nazareth in the first century is questioned on doubts raised in the article "Nazareth" in *Enc. Bibl.* (The exceedingly slim grounds for the non-existence of Nazareth in the first century I have exposed in my article, "Nazareth, Nazorean and Jesus," *Open Court,* June 1910).

In answer to the assumed *Nazarja* divinity identical with the god *Jesus,* and his adorers, the *Nazoraioi,* the following is to be said: The form *Nazarja* occurring in the hymn of the Christian gnostic sect of the Naassenes (who knew the Fourth Gospel and therefore were no pre-Christian sect) is nothing but the Syrian or Aramaic form for the Greek *Nazoraios* in the New Testament, i. e., "he of Nazareth." This is proved by the Syrian translation of the New Testament. The Syrian *Nazarja* has nothing whatever to do with the Hebrew *Nazarjah,* "one whom Yahveh guards," (note the difference in the spelling of the last syllable in both forms). Another form, which Drews cites as identical with the Syrian *Nazarja,* and which occurs in the Talmud, namely *nozri,* also has nothing to do with the idea of protector. This form *nozri* is simply a Hebrew form denoting descent, i. e., "he of Nazareth," just as *Thimni* (Jud. xv. 10) means "one from Thimnatha" and *Beth-ha Shimshi* (1 Sam. vi. 14) "He from Beth Shemesh." The Syrian *Nazarja* and the Hebrew *Nozri* both mean the same as the Greek *Nazoraios* of the New Testament, "he of Nazareth." Nevertheless the strongest blow which this whole pre-Christian *Jesus Nazarja* saviour-protector-divinity receives is the one dealt by Aramaic scholars, who say that at the times of Jesus the Palestinian Jews did not use the Hebrew verb *nazar* for "to guard" but the Aramaic *ne'tar.* In reproducing the theory of Professor Smith, Drews unconsciously weakens it (p. 59) by appealing to the "protector of Israel" (Ps. cxxi. 4) to prove that *Nazarja* means protector. Drews does not notice that in the Hebrew of that passage not the verb *nazar* but *shamar* is used which also means "protect." This bad mistake, which of course one ignorant of the original text does not notice, ought to be corrected in future editions. The whole passage of Epiphanius speaks for *Nazaraioi* as being the earliest name of the Christians rather than that of a pre-Christian sect, especially since it clearly distinguishes between *Nazoraioi* and the pre-Christian *Nasaraioi,* who according

to him rejected the Pentateuch and were vegetarians. The passage of Epiphanius and the other documents mentioned above afford at least a very uncertain basis upon which to build such a theory of a pre-Christian *Jesus-Nazarja* divinity.

But to another point. In bringing before the reader the extensive material from the comparative study of religion to prove his thesis, we notice that the author does not always distinguish sharply between earlier and later customs and ideas of Christianity. Nevertheless this ought to be done when we attempt to trace the first beginnings of Christianity. If Drews adduces "the Magi or kings" (p. 94) as the three stars in the sword-belt of Orion, we must remember that the Gospel speaks neither of kings nor of three persons and that the legend of the three kings is a very much later legend whose foundation on pagan myths we of course would not in the least dispute.

When speaking of Christian baptism and tracing its origin back to fire-worship (p. 119) the author says the Greek name for baptism is *photismos,* "enlightenment," but we must remember that in the New Testament no such a term is used for baptism though later ecclesiastical writers call catechumens expecting baptism soon, *photizomenoi,* without surely any thought of fire-worship.

On page 89 the flight of Mary into Egypt on an ass with the child Jesus is traced back to pictorial representations of the flight of the son of Isis on an ass out of Egypt, and here we must again remember that nothing of all this occurs in Matthew and that very probably the whole myth of the flight to Egypt is based on the allegorical use of Hosea xi. 1, the people of Israel, the son of Yahveh, being taken as the type of the Messiah.

The martyrdom of Stephen is traced back and according to Drews is made to rest on the constellation of Corona (Greek, *Stephanos*) becoming visible on the eastern horizon about Christmas (St. Stephen's day, December 26) but we must remember that both the December 25th as the birthday of Christ and the following day as the date of the martyrdom of Stephen are very, very much later institutions of the church.

Drews further connects the expression *Agnus Dei* (lamb of God) etymologically with the fire-god Agni and says that it is nothing else than *Agni Deus* (p. 145), but here he forgets that *Agnus Dei* is the later Latin translation of the Greek ἀμνὸς τοῦ θεοῦ (John i. 29) and not the original expression.

When the cross of Christ is brought into connection with the

ancient fire-cross and other symbols, the author unconsciously admits that this comparison is not justifiable, since he himself rightly shows that the term *stauros* in the New Testament does not mean "cross" but simply "stake" and that marks of nails are first mentioned in the late Gospel of John (p. 147). It is doubtful whether Jesus was nailed to the cross, and even if he was fastened by nails, the cross was not necessarily of the shape + but may have been of the T shape which form the early so-called Epistle of Barnabas assumes, whose composition Drews places much earlier than the Gospel of John, even towards the end of the first century (p. 220). The author therefore has also no right to say that "the Saviour carrying his cross is copied from Hercules (Simon of Cyrene), bearing the pillars crosswise" (p. 241). If Drews shows that criminals in the time of Jesus were simply bound to the stake and left to die, what has the carrying of the stake to do with Hercules bearing the pillars "crosswise"? That condemned criminals had to bear the stake to the place of execution is related by classical writers.[6] By the way if Simon of Cyrene is Hercules how does Drews explain that this Simon is said in Mark xv. 21 to be the father of Alexander and Rufus, persons of whom we know absolutely nothing, but who must have been well known in the Christian community where this incident was first related?

Some other strictures might be made concerning the method employed of using ideas and facts of very much later date than the times of the origin of Christianity, as for instance the use made of the Talmudic double Messiah, the Messiah ben Joseph and Messiah ben David (p. 80) corresponding as is said (p. 81) to the Haman and Mordecai of the Jewish Purim feast. Concerning the custom at this festival of executing one criminal, Haman, and releasing the other, Mordecai, under the mask of which custom Frazer believes that a Jewish teacher by the name of Jesus may have been executed, and which Drews accepts as an absolutely certain custom among the Jews, making much of it in favor of his thesis, we have not the least trace in Jewish literature nor proof of its existence. The Purim festival as we know it among the Jews is based entirely upon a romance, the Book of Esther, and of so late a date that it is not mentioned in the text-books of Hebrew archeology where all the other Hebrew festivals are treated extensively in regard to their origin. The writer of that tale undoubtedly brought the fictitious incident he relates into connection with some Persian or Babylonian

[6] Cic., *De divin.*, I, 26; Valer. Max. XI, 7 and others.

custom or festival (ix. 19 etc.) but he evidently did not know anything certain about the meaning of the word *Pur*, which he translates "lot," though there is no such word for "lot" in Persian.[1] Zimmern assumes the Purim feast to be of Babylonian origin, the New Year festival on which the gods under the presiding Marduk cast lots in an assembly (*puhru*) regarding the fate of the next year. If the custom to which Drews refers existed so late in history among the Jews, the meaning of it must have been totally lost to them, or else the author of Esther could not, as far as I can see, have tacked his story to it. Some commentators are inclined to believe that the Book of Esther was written by one of the many Jews in Mesopotamia or Persia. The book itself only came into the canon under very strong protest because of the ugliness of its extreme fanaticism.

The author of *The Christ Myth* surely makes very skilful use of many assumptions which he gives out as well proven facts in favor of his thesis, but it is doubtful whether in the long run they will stand the test. How careless the author is in making use of material in his favor without testing it, is shown on page 79, where he follows an interpretation of Dan. ix. 26, which the staunchest orthodoxy has followed for 1800 years, but which scientific investigation has rejected for over a century, and which even the neo-Platonist Porphyry and a Christian writer Julius Hilarianus of the fourth century had rejected. I refer to the orthodox interpretation that in this passage reference is made to the dying Christ. All scientific investigators refer it to the death of some historical personality, such as Alexander the Great, Seleucus Philopator or Onias III. The author is often too credulous in accepting his material and therefore too quick in suppositions, as when he lumps together all the different Marys of the New Testament, the mother of Jesus, the Magdalene, the mother of James the Less and Joses into the twofold form of the mother and the "beloved in the sexual sense of the word," of the God *Jasius* or *Joshua* (p. 117); or when he suspects the *Alpha* and *Omega* of Revelation to be concealed in *Ao* (*Aoos*) said to be a Greek form for *Adonis*, while philologists consider this latter form as probably the Doric *aos* for Attic *eos*, "the dawn"; or when he suspects Golgotha as being a site of ancient Adonis worship, because Golgos is said according to some scholia to have been a son of Adonis and Aphrodite, while Golgotha (Hebrew *Gulgoleth* = skull)

[1] Cornill, *Einleitung ins Alte Testament*, p. 140.

may very simply only refer to the skull-shaped locality of the execution of Jesus.

* * *

Going over to the second part of the book, "The Christian Jesus," we fully agree with the author that without Paul Christianity would have remained a very restricted faith and would have made but little progress. The author clearly sees the important and dominant part which Paul took in the rising Christianity. He gives a very good description of Paul's metaphysics, his doctrine of sin and redemption, his mystical ideas of the union of God and man through Christ, and the magical power of baptism and the Lord's Supper, etc. Still, if "the information the Acts give as to Paul's life is for the most part mere fiction" (p. 166) and if all the Pauline letters are so extremely doubtful (p. 166 f.) regarding their authenticity as the author assumes, we can not very well understand why such an extended use is made of these letters in proving the thesis of the book, and why any passages in them running contrary to it are declared interpolations. If the letters were written "by a whole school of second century theologians" we should not expect that there would be much necessity for interpolations later. At least so it seems to the writer.

We also do not understand why, if the Acts are so very untrustworthy, so much use is made of them to prove the existence of a widely spread cult of the pre-Christian god, Jesus. From Acts xviii. 25 and other passages in the Acts, the conclusion is drawn that the preaching about Jesus of Apollos and others who knew only the baptism of John the Baptist, was a teaching about the pre-Christian god Jesus. Others who take the words of the Acts regarding the preaching of Apollos as the author of Acts meant them, simply see in the fact of Apollos knowing only of the baptism of John a proof that Jesus did not himself institute a special baptism as the last words of Matthew give it (evidently a later addition betraying itself by the formula "in the name of the Father and the Son and the Holy Ghost") and that the baptism in the name of Jesus was only gradually introduced by the growing primitive church. The Acts surely contain many inaccurate statements, but the "we" passages incorporated into their second part at least seem to bear the stamp of genuineness. These even contain a mention of James, (xxi. 18) whom Paul (Gal. i. 19) calls "the (definite article, not *a*) brother of the Lord," evidently meaning a close relation to Jesus,

no spiritual brother or follower.[8] What Jerome, a zealous advocate of the perpetual virginity of the mother of Jesus, said a few centuries later about this James, does not count.

As concerning the Acts, so also with regard to the authenticity of the Pauline letters we do not wish to start a long discussion. We will restrict ourselves to the following: Drews places the epistle of Clement of Rome at the end of the first century (p. 220). Now this letter mentions the first letter to the Corinthians by name (xlvii) referring to the dissensions in Corinth, discussed in the first chapter, and to Apollos and Kephas (the latter by the way seems to be considered a legendary character by Drews, according to the preface p. 20). Further, the letter of Clement has passages which remind us of passages in the letter to the Romans; it has passages which occur verbatim in the letter to the Hebrews (non-Pauline, but strongly testifying also to the humanity of Jesus, v. 7). I may just mention in connection here that Clement, of whom Drews says that he "is completely silent as to the Gospels," twice cites words which he atributes to Jesus, occurring in the Gospels (XLVI & XIII). To close my remarks on the authenticity of the Pauline letters, I will say that to me the extremely passionate, polemical, personal and individualistic character at least of the letters to the Romans, Corinthians, Galatians and Philippians seems to be the strongest proof for their authenticity. I do not see how second century theologians could ever have invented this. Could Paul's pathetic wish (Rom. ix. 1), for instance, to be accursed for the sake of his people, ever have been invented by second century theologians, when the complete separation of Christianity from Judaism had long been an established fact?

Now to some points in "The Pauline Jesus."

"The form in which Paul grasped Christianity was that of an incarnation of God" says Drews on page 189. Still this form and representation of Paul's religion in his letters does not refer to any historical Jesus in which this incarnation took place. All that seems to look like this is mere phantom. Though the words seem to point to a human Jesus, they do not mean this. "It was not unusual among the heathen peoples for a man to be crucified in place of the Deity as a symbolical representative; although already at the time of Paul it was the custom to represent the self-sacrificing God only by an effigy, instead of a real man. The important point, however,

[8] The brothers of Jesus in 1 Cor. ix. 5 and mentioned by name in the Gospels are allegorized into "followers of the religion of Jesus" (p. 172).

was not this, but the idea which lay at the foundation of this divine sacrifice" (p. 188). "When Paul designated the Messiah Jesus as a bodily descendant of David according to the flesh, born of woman, he thought not at all of any concrete individuality which had at a certain time embodied the divinity within itself but purely of the idea of a Messiah in the flesh" (p. 190). All have thought thus far that the designations just mentioned "from the seed of David according to the flesh," "born of woman," and others, "born under the law, "delivered over in the last night," "crucified," "buried," "seen after death by his disciples" etc., occurring in the Pauline letters referred to an historical personality, but according to Drews they mean nothing of the kind. If any passages seem to speak too definitely about some historical personality Jesus, such as the above mentioned passage in Galatians which mentions "the brother of the Lord," or the passage in 1 Corinthians about the delivering of Jesus in the last night, or the passage on the different appearances of the Lord after his death in 1 Cor. xv, a passage which even a David Strauss considered as the oldest account of the visions the disciples had of their master, these passages are declared later interpolations. All that seems to point to an historical Jesus, says Drews, is as historical as what was said of the redeemers Hercules and Mithras (p. 178). Yet these were believed to have lived in antiquity while Paul refers to a person with whose disciples and brothers he had come into personal contact; and while Hercules is the offspring of Zeus and a human woman, and Mithra is born from the rock, Jesus according to Paul comes simply from the seed of David and is born of a woman.

When Drews in several places in his book speaks of the deification of other human persons in history; when he mentions Jewish gnostic sects, who imagined the Messiah to have become incarnate in Adam, Enoch, Abraham, and so on, finally to become incarnate in Jesus (p. 112); when he says that "the guiltless martyrdom of an upright man as expiatory means to the justification of his people was also not unknown to the adherents of the Law since the days of the Maccabean martyrs"; when he says "a captive criminal was looked upon as an imitation of the God sacrificing himself" (p. 188); it is hard to see why after all this he goes to the trouble of attempting to prove that there was no historical Jesus who could have been deified and considered a divine incarnation, and whose death could be taken as an expiatory death for mankind. Drews does not seem to consider at all that these possibilities could have

been further supported by the fact that Jesus very probably thought himself specifically and divinely chosen for his work and made claims which moved his followers to exalt him to a divinely sent saviour and redeemer. The author of *The Christ Myth* criticizes liberal theology for assuming "ecstatic visionary experiences" and "pathological states of over-excited men and hysterical women" among the causes of the historical foundation of Christianity (p. 268). But are these assumptions so very unreasonable? It is a well-known fact that in religion reason plays a very much less important rôle than feeling, and in the foundation of the great religions of the world the ecstatic, abnormal, and pathological states of mind of their founders have always been a very important factor. A. Meyer (*The Resurrection of Christ*) says: "Visions are in certain periods of history the necessary form of religious revelation. A visionary disposition possesses many morbid elements but in great men it is an heroic sickness."

But my review is already too long. I will therefore restrict myself to the remaining questions and remarks which further occurred as important to me while reading the book. I will give these as they occurred to me consecutively in reading the remainder of "The Pauline Jesus" and the following chapter, "The Jesus of the Gospels," without any special order, since each question or remark is independent of any of the other remarks or questions.

I may be mistaken, but is it probable (p. 186) that the first Christian missionaries in Antioch made any compromise with the more or less voluptuous Adonis cult? Paul in his letters at least does not speak in any very accommodating way of heathen cults.

If Antioch is rather the birthplace of Christianity and the spreading of Christianity did not start from Jerusalem (p. 210), why then does Paul so often return to Jerusalem, not only according to the Acts, but also according to his letters, keeping up his connection with the mother church and supporting it by collections from the churches he founded?

Is not the reiterated statement of Paul that he had seen the Lord (of course in a vision) upon which he bases his apostleship (1 Cor. ix. 1 and other places) as well as the older apostles in Judea, and at the same time the antagonism of his evangelization methods to the older apostles who considered themselves the more privileged as having stood nearer to the master, a proof of the exsitence of a Jesus, who had given no hint whatever as to the methods to be followed regarding pagan believers, and had con-

centrated all his efforts to the salvation of his own people in expectation of the near end?

Has our author, who places *The Doctrine of the Twelve Apostles* so very early, "perhaps even at the end of the first century" (p. 220), ever read this work? He claims that it speaks of a Jesus-God "in no wise the same as the Christian redeemer" (p. 62) and that it "cites Christ's words, such as stand in the Gospels, but not as sayings of Jesus." It seems to me that if this work when giving thanks to God for the eucharist repeatedly speaks of Jesus as "thy servant Jesus, through whom thou hast revealed to us life, knowledge and immortality, etc.," this does not sound very much as if referring to a Jesus-God. Besides this it *does* cite such words as those standing in the Gospels as sayings of the Lord, i. e., Jesus (VIII, 2; IX, 5). Evidently Robertson too on whom Drews depends had not read this work thoroughly. It is always better to search independently.

The same may be said of the secular testimonies concerning early Christianity, those of Tacitus, Pliny, (the passage on the persecution under Nero in Suetonius is not mentioned at all). The author rejects all these testimonies as forgeries (pp. 228 and 231). Has he made an independent investigation of all of them? If he had done so he might have found out how exceedingly slim are the grounds on which such authorities as Hochart and others reject these passages. The reviewer at least has experienced this by independent investigation and since that time he has become very suspicious in regard to "authorities." If the testimonies referred to are Christian forgeries, the only grounds for them must have been that the forgers foresaw the modern attacks on the historicity of Jesus, for there were no such reasons for forgery in their own times and what other reasons could have influenced them I do not understand. In regard to the Tacitus passage, on which the main attack is directed, I have asked the very pertinent question, why should just *this* passage be forged, when Sulpicius Severus, who cites it verbatim in regard to the Neronic persecution, also cites the same Tacitus verbatim in regard to other matters *not* dealing with Christianity. (See *Monist,* Jan. 1911).

If Schürer thinks that Josephus may not have meant James the brother of Jesus, (*Ant.* IX, 1) this ground is also not yet decisive.

If Drews cites the hyperbolical words of the so-called Epistle of Barnabas (which he places as early as 96 A. D., p. 220) that Jesus chose his apostles from the worst of sinners to preach his

gospel, in order to prove that he came to call not the righteous but sinners to repentance, adding that this was neither written by an apostle nor one of their pupils (which no one claims), these words at least seem to refer to an historical Jesus. Further they seem indeed "to be written after our Gospels," as they cite words occurring there, and they further do *not* seem to be written "at a time when the learned masters of the church had still a free hand to show their spirit and ingenuity in giving form to the evangelical story." If Drews places this epistle at 96 A. D. and rejects the Tacitus passage as well as the Pliny passage referring to persecutions in Bithynia about 111, how then could there be much of a church with learned masters at that time according to his view? The fact is rather that the critics place the letter of Barnabas about 25 years later, when all the Gospels very probably were in existence.

When Drews wrote "The Jesus of the Gospels," did he think of the strong proofs for an historical Jesus to be found in some of the parables, such as the parable of the evil husbandmen and the parable of the supper which the king made for his son? According to both parables (it does not matter whether Jesus spoke them in the form we have them or whether they were enlarged upon by the Gospel writers) punishment is dealt out to the evil doers, who, it is clearly hinted are meant for the Jewish people. That these parables speak of an historical Jesus, the final and most eminent of the prophets God sent to his disciples, as the parables put it, I should think is clear.

Jesus is a physician-god like Asclepius, on account of the miracles related of him (pp. 240, 264 and also 138). Still if (p. 240) Tacitus and Suetonius are referred to as relating miracles performed by Vespasian of the same nature as those done by Jesus, and "if the Old Testament stand as a model" in this respect, why is Jesus then necessarily a healer-god and not historical?

All along we have been told that Jesus was a pre-Christian God. But on page 246 it is said that the Gospels intentionally invented the deficiencies of Jesus that they record, i. e., temporary inability to do miracles, non-omniscience, moral imperfection, etc., in order "to paint the celestial Christ of Paul for the faithful as a real man and to treat his idea of humanity seriously." Liberal theologians have thus far considered these deficiencies of Jesus as a proof of a historical perfectly human Jesus, and even orthodox theologians look at them as showing how thoroughly God became

man, but now we are told that all this is only ingenious device. Our intelligence is often strongly taxed.

On page 36 Drews rightly says that in the view of a later age primitive gods become men, such as Achilles, Hercules, Siegfried, etc. He then adds that the elevation of men to gods is as a rule only found in the earliest stage of human civilization or in periods of moral or social decay, worthless flattery, etc. Well, were not the later Hellenic times such times, when "a Plato and Aristotle were honored after their death as godlike beings" (p. 267); when important generals and kings and emperors were deified, as also happened to Apollonius of Tyana, a contemporary of Jesus? If "it was merely an expression of personal gratitude and attachment, of overflowing sentiment" (p. 268) to render divine honors to eminent men, why should this not have happened to Jesus? "Primitive gods in a later age become men," it is true, but this process is generally a very long one. It will be hard to make people believe that the Jesus of the New Testament is the outcome of such a process. He springs up suddenly in history and the process of his deification is a comparatively short one and corresponds to the time in which similar processes of deification came about.

The ethical teachings of Jesus are truly (p. 257) no higher than those of other ancient moral teachers, Jewish or pagan, but is not the actual life of Jesus, especially among the lower classes, those looked down upon by the righteous, in order to save them, a good proof of his real humanity? It is just this life of Jesus which seems peculiarly real. Further, is not just the "egoistical pseudo-morals, his basing moral action on the expectation of reward and punishment in the future, his narrow-minded nationalism, his obscure mysticism with mysterious references to his heavenly father, etc." as Drews characterizes the teaching of Jesus (p. 257), a proof for the historical Jesus, or is all this only intentional invention of the Gospels again?

In order to prove his thesis that there is no historical truth in the Gospels and that the impression which Jesus is said to have made upon his time is the impression of a fictitious personage, Drews draws a comparison with Goethe's *Werther*, which produced an enormous impression though entirely fictitious (p. 257). But the great impression made by *Werther* is perhaps due to the concrete realities standing behind it, the suicide of young Jerusalem in consequence of a deep love for the wife of a friend and the inner and outer experiences of Goethe himself.

In the Gospels, and, we may add, the letters of Paul, there is likewise a mixture of historical truth and myth, of concrete reality and inner and outer experience. The tragical career of Jesus is surely not invented, nor is the impression he made upon his followers. According to page 264 "Christ is only another form of the club-gods of religious-social brotherhoods, such as Attis, Adonis, Mithras, etc., with their yearly bloody expiatory sacrifice, baptism of blood, forgiveness of sins and rebirth." But it is to be remarked that if Jesus is only such a club-god, why was not in his case also a yearly bloody expiatory sacrifice and a baptism of blood repeated? The death of the human Jesus was once for all time the death-knell of all such bloody sacrifices and perhaps just because he was human and no club-god.

If according to page 267 it was possible to create out of a pure idea the semblance of a concrete personality that never existed, first by Paul and then more fully by the Gospels and all this in a comparatively short time, why could not the reverse be true, to create out of an historical personality a divine incarnation? The latter process, if we take into consideration the peculiar mental and ecstatic state of the first followers of Jesus and of Paul, seems to us less of "a psychological puzzle" than the former process.

On page 271 we are told that the lowest stratum on which our canonical Gospels are based was a Judaistic literature which had the closest interest in the historical determination of Jesus's life. "Judaism in general and the form of it at Jerusalem in particular, needed a legal title on which to base its commanding position as contrasted with the Gentile Christianity of Paul; and so its founders were obliged to have been companions of Jesus in person and to have been selected for their vocation by him." "In Paul's lifetime the transformation of the Jesus faith into history did not take place as one can believe from his letters." In order to discredit the apostleship of Paul, the Judaists "made the justification for the apostolic vocation consist in this, that an apostle must not only have seen Christ risen but must also have eaten and drunk with him" (p. 270). While liberal theology is inclined to see in the coarse materialization of the appearances of Jesus to his disciples after his death later accretions to the original resurrection story as told in 1 Cor. xv, and this probably in opposition to the Docetics who taught that Jesus had only an apparent, not a real, body, even before his death, Drews thinks that all this was done by Judaistic Christianity with the set purpose of making Jerusalem the central seat

of authority. "For this reason the god Jesus was transformed into an historical individual whose central point of action was Jerusalem" and whose right successors were the Judaistic apostles.

The reviewer must confess that it took him a long time to understand this reasoning of Drews as to why and how the god Jesus was transformed into an historical individual. It is very intricate to see how the god Jesus was made historical and yet was not historical, especially since the author says (p. 272) "that the Pauline epistles themselves contain nothing to lead one to believe that the transformation of the Jesus faith into history took place in Paul's time," while on page 275 he says that "the Pauline Christianity was in earnest with the manhood of Jesus," speaking similarly in earlier pages (p. 191 etc.). It seems then that Paul, like the Judaists who laid the basis for the Gospels, as Drews says, only talked of Jesus as historical though he was not historical. This whole thing seems to me to be one great tangle. The matter becomes still more confused when we read that all this representation of the god Jesus as an historical man, though not historical, was done in order to meet the gnostics of whom Drews says that they "agreed with the Christians that Jesus had been human" (p. 274). If they agreed with the Christians that Jesus was human (I suppose Drews means to say that they represented Jesus as human though he was not human) why then all this trouble of Paul and the Gospels to meet them by making Jesus historical who was not historical?

On pages 278-281, the author speaks of the Fourth Gospel as mainly directed against gnosticism "though itself gnostic but fundamentally differing" from the views it meets by "asserting that the Logos was made flesh." In this connection Drews says: "The historical picture which came down to the writer of the Fourth Gospel was forcibly rectified by him and the personality of Jesus was worked up into something so wonderful, extraordinary and supernatural, that if we were in possession of the Fourth Gospel alone, in all probability the idea would hardly have occurred to any one that it was a treatment of the life-story of an historical individual." This seems to me to be an admission fatal to the theory of Drews, for it is just the great difference between the idealistic Fourth Gospel and the Synoptics and Pauline letters which make us surmise a human, historical Jesus behind the latter.

In the appendix, "The Religious Problem of the Present," the author criticizes much of the language and phraseology of liberal theology, as he also does in other passages throughout the book,

and to my opinion in many cases rightly. He criticizes especially that such liberals speak still of Jesus as "redeemer" and "the voice of God to us." Still when Drews himself says, giving his view of religion: "God must become man, so that man can become God, and be redeemed from the bounds of the finite, etc." (p. 296) and when he speaks of "the divine essence of mankind, the immanent Godhead" as "the inner Christ" to be worked out, etc., his phraseology does not differ very much from that of those he criticizes; perhaps after all he does not differ so much in the essential points of religion from those he criticizes. On page 290 he calls the phraseology of a liberal theologian, A. Meyer, concerning God in connection with Jesus, pantheistic. Yet he himself, speaking of "the tidal wave of naturalism, ever growing more powerful and sweeping away the last vestige of religious thought," thinks that "the sinking fire of religion must be transferred to the ground of pantheism in a religion independent of any ecclesiastical guardianship."

The Christ Myth is a good statement of one of the many present theories that Jesus never existed, and we hope that it may find many readers, in order that the actual truth may be probed to the bottom. But just for this reason it would have been desirable that the author in giving the facts on which he bases his theory, would have been less assertive and would have shown that the facts adduced are really well founded.

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IOWA CITY.

RIGNANO'S THEORY OF ACQUIRED CHARACTERISTICS

The transmission of acquired characters from parent to child was an old problem in the days before Darwin when the theories of preformism and epigenesis were pitted against each other. Preformism was also called evolution in the narrow and literal sense of the word, for the life of any creature was assumed to be simply an unfolding of the type latent in the germ. A real chicken, though invisible on account of its diminutive size, was supposed to lie hidden in the egg, while the epigenesis theory explained the successive stages of the life in both the race and the individual by additional growth. The discussion of this same problem was renewed by Weismann, who takes a very uncompromising position against Lamarck's view of the development of life through exercise of organs and specialization by use. Weismann denies altogether the inheri-

tance of acquired characteristics. It is commonly considered that the two positions, preformism and epigenesis, are incompatible because contradictory, that if one theory is true the other must necessarily be wrong; but Rignano is confident that he has found a middle ground.

Both parties are agreed that heredity is a kind of memory, and memory is a subject upon which great interest has been concentrated. All recent attempts to bring out the significance of this fundamental factor of organized life are based upon Hering's essay, originally a lecture, "On Memory as a Function of Organized Matter."[1] Among other works in this line we will mention Semon's interesting book entitled"Mneme as the Preservative Principle in the Change of Organic Action,"[2] and also Rignano's "On the Inheritance of Acquired Characteristics."[3]

Rignano has been much before the scientific public on account of his new theory of inheritance which he calls centro-epigenesis and which is intended to be a conciliation between preformism and epigenesis. In making the attempt at overbridging the gulf between these two hypotheses, Rignano has worked out his theory with a great mass of detail which renders his book valuable, if for no other reason, as a collection of the most important data and propositions as well as theories proposed on this much mooted subject.

It is noteworthy that Rignano is not originally a biologist but an engineer and has for a large part of his life devoted special attention to physics. This had influenced him in so far as he falls back upon physical allegories of which his comparison of memory to electric currents appears in his conception to be more than a mere comparison.

Rignano is greatly influenced by Weismann whose belief in the isolation of germ plasma he incorporates into his own theory not to its whole extent but only so far as to assume that not the entire germ plasma but only its central zone remains isolated and is therefore stable and not subject to change. This theory of the existence of a stable central zone induces him to call his theory the hypothesis of centro-epigenesis.

It is well known that Weismann tries to explain in this way the rigid stability of heredity. His favorite evidences are found in

[1] Published in an English translation by The Open Court Publishing Co. in 1902.

[2] *Die Mneme als erhaltendes Prinzip*. Leipsic, Wilhelm Engelmann, 1908.

[3] An English translation by Basil Harvey to be published by the Open Court Publishing Company is in preparation.

the beehive and the ant-hill where the queen bee and the queen ant are independent individuals and absolutely separate from the workers. So if a community either of bees or ants changes conditions unsuited for their lives the race would die out if they depended on the transmission of new characters acquired by the workers and not by the queen. Facts compel us to assume that bees and ants do adapt themselves to new conditions, for changes set in in the workers although they can not possibly have been transferred by them upon the queen; and in the same way Weismann believes that the germ cells are independent organs, which cannot be affected by the experience or new acquisitions of the rest of the body, the so-called somatic cells.

Rignano differs from Weismann in assuming that only the central zone of the germ plasma remains stable and continues to consist of the same substance, remaining isolated except for periodic impulses which it gives to somatic life, in this way directing them on to the ontogenetic development of the individual according to the phylogenetic development of the race.

The theory of a central zone is extremely doubtful and it is scarcely probable that further investigations will bear out either assumption, that of a special memory substance which has been deposited after the fashion of galvanic currents, or that heredity is due to the existence of a special germ plasma with a stable and isolated central zone. Rignano's book contains much material of great interest but its value consists not in what he says but in how he says it, for it will certainly stimulate inquiry.

According to our opinion memory is not due to an identity of substance, but to a preservation of form. The same is true of heredity which is a memory transmitted from the parent organism to its offspring, and for the sake of proving the preservation of form in a constant change of substance we must bear in mind that it is characteristic of all life. In order to understand that the race memory is stronger than the memory of a single individual, we have simply to assume that the characteristics of forms, consisting ultimately of millions and millions of generations, are so much stronger than those fewer ones of one generation which we see before us in the parent organism. In fact it stands to reason that the germ plasma representing the innumerable ancestors of the race should be overwhelmingly more vigorous than any amount of characteristics acquired during life. This principle would not exclude that once in a while acquired characteristics can be transmitted, and we may add that they are transmitted

only in cases where the germ plasma of the individual is favorably predisposed for receiving them. In our opinion this proposition would solve the problem of preformism against epigenesis in the simplest and most satisfactory way. At any rate it disposes of the extravagant claim of Weismannism.

Rignano accepts the vaguest part of Weismannism by assuming a bodily identity and isolation of the germ plasma. This hypothesis is the more improbable as all life produces a change of substance, and it seems all but impossible that one part, and in fact the most important part, of an organism should remain isolated, stable and unchanged. Rignano escapes some of the difficulties of Weismann by reducing the isolation of the germ plasma and conceiving it only as relatively stable.

Rignano declares that both preformism and epigenesis are untenable in their extreme forms, and that though both theories are commonly assumed to exclude one another each contains in its way an important truth. In his defence of preformism Rignano falls back again on Roux who by extirpation produced half-embryos and created otherwise perfect organisms which only lack definite organs. These experiments allow no other interpretation than that definite portions of the germ are preformed.

The explanation of memory as due to a preservation of form seems not only simpler but more probable than any other hypothesis which is based upon mere assumption. The stability of form preserved in the flux of sentient substance is no less persevering than the stability of a substance which in living organisms is, to say the least, very improbable.

Rignano argues that since the organs of an organism are always in equilibrium they cannot cause the changes of a further development. Therefore he accepts the conclusion that there must be a special zone of substance which remains constant and unchanged during the development of the individual, and that this zone sends out the stimuli which dominate the progress of organisms from stage to stage. Finally he identifies this central zone with Weismann's germ plasma which represents the phylogenetic factors and remains separate from the ontogenetic fate of the individual. But Rignano differs from Weismann by assuming that not the whole germ plasma but only its center remains isolated, which isolation, however, does not exclude that from time to time it sends out impulses and effects the individual somatic conditions without being reacted upon. This is claimed to explain the several facts which

have troubled biologists, both the preformists and the believers in epigenesis.

Rignano finds a proof of his theory in Roux's experiments of post-generation. The salamander's amputated feet grow again, so do the lenses of the triton's eyes, which indicates that the factor of generation does not lie in the destroyed organs but has its source, in some other part of the body according to Weismann, the germ plasma.

Rignano, having devoted much of his thought to physics, falls back upon a physical explanation of memory which in our opinion is rather unfortunate. Instead of regarding memory as a preservation of forms in sentient substance he compares the nervous activity to the currents of accumulators, which deposit a substance capable of reproducing the same current. A discharge can take place only if resistance is sufficiently weak. Thereby Rignano explains how the different nervous currents of ontogenesis follow each other in the definite succession of their phylogenesis. Every nervous current reproduces the analogous state of evolution which the discharge of the accumulated elements render possible. These considerations induce Rignano to explain the phenomena of memory as resting on the same foundation. The nervous current which corresponds to a definite sensation also deposits a specific substance, which later on reproduces an analogous nervous process and with it an analogous elements of consciousness. This reproduction actually takes place if the resistance to a discharge is sufficiently weak, which means that the former nervous situation repeats itself in the same or partly the same way.

Mr. Rignano writes in a private letter to the author: "Naturally what interested me more than all is what you say concerning biological memory, and you have understood perfectly that the basis of memory resides in the anabolic processes of a restoration of living substance. A little step further and you will perceive memory as a process of specific accumulation, which means that this conception of memory is an accumulation of energy. The transition of it from a potential to an actual state constitutes what is called mnemonic evocation, which seems preferable to the old conception of memory as a trace. This becomes evident in my article on 'The Mnemonic Origin and Mnemonic Nature of Affective Tendencies,' for every one admits that these affective tendencies are only accumulations of energy, and if they are of a mnemonic origin it means that the

mnemonic phenomenon itself is also in its essence only a phenomenon of accumulation."

It is possible that the old view of memory conceived as a trace may have been insufficient, and may have interpreted it as a dead inactive impression like that of a seal, but a careful consideration of the facts will show that form is the indispensable and most important feature in the preservation of memory. As I conceive the nature of memory it is a form, not only of substance, but also of energy. Whatever energy may be stored up, the character of energy, its significance, its meaning, does not depend on any kind of force, be it electrical, or vital or mechanical but on the form of force, which again is dependent upon the impression preserved in the brain substance.

It has been my endeavor to bring out the all-importance of form, which theory becomes most apparent in biology.

Rignano's explanation of the way in which the germ plasma reproduces the succession of specific nervous currents which have been produced by phylogenesis appears to me somewhat stilted and could be greatly simplified by seeking the cause of memory purely in form and not in a specific substance deposited by a kind of nervous accumulator.

There is a third hypothesis proposed by Rignano which conceives the life process, especially assimilation, as "an internuclear oscillating nervous discharge," but Rignano himself considers the proposition a bold one and points out that the two other hypotheses are independent of the third. His work in this line is more tentative than safe in its constructions and we may add that in all his labors his criticism is the most valuable part of his work. Rignano is well read in the literature of his subject, perhaps more so than others, for the horizon of specialists is often limited to the publications that appear in their own native language. Rignano's book bristles with references to facts and experiments of great significance, and this feature of his labors alone would render his presentation both instructive and stimulating whether or not his two main theories are right. P. C.

ECCENTRIC LITERATURE.

The authors of eccentric literature are usually cranks or mattoids.[1]

[1] The term "mattoid" is preferable to "crank," which is misused.

This literature is characterized by an association of false ideas based upon false premises, but which may be logically deduced. It is usually written in disregard of all known rules of composition and style, and its purpose is often difficult to discover. It is full of extravagant statements and visionary matter in philosophy, science, religion and politics. Eccentric literature has been called heterodox, but it has been remarked, that it is usually "heterodox ignorance."

As early as 1785, Adelung,[2] a German author, published a work of seven volumes on the "History of Fools," by which he meant biographies of "celebrated necromancers, alchemists, exorcists, conjurers, astrologers, soothsayers, prophets, fanatics, visionaries, fortune-tellers, prognosticators and other philosophical monsters." The author of this pioneer work said he desired to present to the public an assemblage of men who made it their business to oppose philosophy and sound reason, and thereby to imagine themselves great philosophers, but who rather brought philosophy into contempt.

One difficulty in selecting eccentric literature is due to the fact that some great minds, known to history, have manifested in their writings symptoms of eccentricity of all degrees until in some instances insanity has been reached. In fact, there are few sane people who have not during their lives been under the influence of some momentary illusion or hallucination. The greatest and wisest men have at times expressed such foolish ideas as not even ordinary people would have thought of saying. Highest reason has its freaks.

Eccentricity and deranged mentality, as manifested in geniuses, have been treated at length by the writer in another place;[3] the intention here is to consider the writings of those whose eccentricity is more of a permanent nature and where minds are much less powerful, brilliant and durable, though their delirious ideas are sometimes expounded with much plainness and animation. Many aberrated persons with literary claims and scientific associations, produce volumes, in which the steps from eccentricity to partial or complete insanity can be traced. There is enough of such curious

[2] *Geschichte der menschlichen Narrheit*, etc., Leipsic, 1785.

[3] See chapter on "Genius and Insanity" in Senate Document (187, 58th Congress, 3d Session), entitled *Man and Abnormal Man* (780 pages).
This document may be obtained gratis through any United States Senator or Representative, or by sending its price (40 cents) to the Superintendent of Documents at the Government Printing Office, Washington, D. C.

and eccentric literature almost to make a library. There are at least 284 authors who have written eccentric literature.

The following is a table giving the number of eccentric books according to subjects. It will be seen that religious works predominate; books on spiritism, which are numerous, have not been collected.

CLASS	NO.
Theology	82
Prophecy	44
Philosophy	36
Politics	28
Poetry and Drama	9
Language and Grammar	8
Miscellaneous subjects	20
	227

SYMPTOMS OF ECCENTRIC LITERATURE.

Some cranks in their writings continually play upon words to absurdity, or use large numbers of words to no purpose, even writing volumes full of redundancy. Others repeat ideas of great statesmen or philosophers, but distort them by exaggeration, often making them ridiculous. Another symptom of eccentric literature is a use of stereotyped phrases in a peculiar sense and repeated many times with useless details. Many words are underscored, and the writing is in different characters. Even the pages may have various colors. As an illustration of profuseness of writings, one work consisted of 117 volumes. In addition to prolixity, the purpose is not only absurd, but the nature of the books is often entirely foreign to the education of their authors. Thus a physician writes concerning geometry, and a cook on political economy. A pseudo-geologist discovers a secret way of embalming bodies that is known to any demonstrator of anatomy; a university professor in a treatise mentions the exhalations of the fish as an advantage of sea-bathing, and yet his book contained many good things, reaching a second edition.

The ideas of eccentric writers are not only exaggerated but there is sometimes a painful disproportion in them; thus after ex-

pressing a sublime conception, they suddenly descend to trite ideas which are usually opposed to the views of most people. Some choose difficult subjects, as the exposition of the Apocalypse or the squaring of the circle, possibly to give the impression of mental profundity. Books on machines for perpetual motion are of the eccentric type; so, also, are odd interpretations of scripture. Cranks try to prove great men mistaken. It attracts attention and seems flattering to them. For instance, much has been written to prove Newton wrong. Some simply dispute the statements of authorities in order to bring themselves into notoriety. Some persons also regard the Bacon-Shakespeare controversies as eccentric literature.

ECCENTRIC TITLES.

Eccentric books frequently have very long titles, and some are so peculiar as to leave no doubt as to the nature of the work. *Pneumatology of Spirits and their Fluid Manifestations,* is one illustration. Another book has nine titles and is dedicated to as many kings. The following is a title: "Problem of the Law of Justice solved by Arithmetic. Statement of what passed for many years between Dr. John Dee and some Spirits." Another work is dedicated to "Father and Mother, to Paris and the Universe." This title is sufficient: "A Doctrine where Chaos will replace Order, and Time put an end to our Aberrations: God, Destiny, Equity. By Equity to accomplish our Destiny, the Will of God."

SCULPTURE.

Artistic cranks entered the public competition at Rome, for a proposed monument to Victor Emanual. Their productions were characterized by stupidity. Some of the designs were grotesque and the inscriptions irrelevant, referring to the artist himself and showing excessive vanity. Many who submitted designs were ignorant of art, being teachers of grammar, mathematics, medicine, law and military science.

POETRY AND LITERATURE.

It has been said of certain decadent poets, that it is very difficult to make anything out of their series of words, which being connected together according to the laws of syntax might be supposed to have some sense but have none, keeping one's mind on the stretch in a vacuum, like a conundrum without any answer.

In literature proper the mental aberrations of authors are less

concentrated than in philosophy and theology. The mind touches rather upon the surface of things. The figures, tropes and analogies are strange. Forms and expressions of ideas, rather than their abstract nature and value are considered. Long speculations are rare.

As an illustration of eccentricity in literature proper, a professor of history in the sixteenth century, when attacked with melancholia, employed his time on a work entitled, "Program of Universal History." He had the fixed idea that the annals of the Egyptians, Jews, Greeks and Romans were composed by fanatics and people without sense. As a matter of fact, he said, men have existed from eternity.

One author writes poetry on an enormous number of subjects, until he passes into mental ramblings and absurdities, yet through it all he preserves the rhythm. Another considering himself the greatest poet who ever existed, composes a heterogeneous mass of malice, pride, talent, vile defects and great qualities.

Walt Whitman's spirit of individuality, exaltation of ego, principle of pride and revolt caused him to become unbalanced. In him are symptoms found in those who proclaim themselves great men and universal reformers. Whitman says: "I have the idea of all. I know all. I am divine, without and within; I make all divine, that which I touch and all that touches me. My head is more than the churches, Bible and symbol of faith."

In certain individuals there seems to be a close relation between poetic power and insanity.

There are rare cases in which insanity increases intellectual power. Here is a case reported by physician. A very pious lady gradually became oppressed with a deep melancholic feeling, causing her mind to be deranged so that it was necessary to place her in an asylum. While there she expressed such remarkable ideas in verse, that they were written down. After she had recovered from her trouble she had no recollection of the matter and was not able to write with such elegance as when she had been deranged.

Another illustration is the composition by a lady confined in an insane asylum. The cause was the loss of her pet bird "Goldie":

"Wise people I know believe
That birds, when they have ceased to breathe,
Will never more revive;
But though I cannot tell you why,
I hope though Goldie chanced to die,
To see him yet alive.

"May there not be, if heaven please,
In Paradise both birds and trees?"

A young man who had become insane through disappointment in love, wrote this among other verses:

"Whene'er I hear the wild birds lay
And the echo in the grove,
And see the face of Nature gay
With beauty and with love,
I'll think that thou art with me still
By vale and murmuring stream,
And o'er the past my soul will dwell
In faint collected dream.
When all the charms of nature fade,
And Autumn leaf is strewn,
One charm will still be mine, sweet maid,
To dream of thee alone."

A graduate of Cambridge University, England, and winner of the best prize for the poem, became insane and was confined in an asylum. Though he had no paper, ink or pen, he wrote on the wooden panels of his room, by the aid of a key, a poem to the glory of King David, the Prophet. The following is the first stanza:

"He sang of God the mighty source,
Of all things, the stupendous force
On which all strength depends,
From whose right arm, beneath whose eyes,
All pride, all power and enterprise
Commences, reigns and ends."

POLITICAL LITERATURE.

Political and sociological subjects are perhaps the most difficult to write about, requiring not only the highest rationality, but a practical and sound sense in adapting ideas to actual conditions in which passion and sentiment play an important rôle.

Those who go to political and sociological extremes or eccentricities usually have an appearance of calm when in the public eye. This may indicate a strong conviction based upon intense feeling, and when partisanship, personal interests and ambitions are involved, they furnish a subject attractive to disordered minds.

Demons, Counsellor in Amiens, France, published works, one of the titles of which is: "The Demonstration of the Fourth Part of Nothing and Something; and All; and the Quintessence taken from the Fourth Part of Nothing and its Dependencies containing the

Precepts of Sanctified Magic and Devout Invocation of *Demons,* in order to find the origin of the Evils of France and the Remedies for them. (8°, 1594, 78 pages and one error)."

The author, Demons, said that he had determined to bring to light a classification of the shades of his timid obscurity in the quintessence which he had taken from nothing and to give an explanation of the enigma of his invention.

Francis Davene, a fanatic dreamer, published much in verse and prose at Paris in 1649 to 1651. He wrote to indicate the royalty which he claimed God had given to him. He desired to prove that the world would end in 1655, and in his "Harmony of Love and Justice" he endeavored to show that Louis XIV could not be the son of Louis XIII. He was persuaded that he himself would supplant Louis XIV.

"Addressed to All the Powers of Europe." The author of this epistle was born at Copenhagen in 1644. At the age of 12, he had visions. He was proud to have made a compact with God, to expel the Turks from Europe and deliver Judea. In spite of his many visions, he lived to be 98 years of age.

Hoverland (born 1758) was strictly of the old regime, detesting new ideas, execrating those whom he called revolters. For thirty years he breathed calumnies and injury against those of his compatriots, whom he accused of liberalism. He manifested his eccentricity by walking in the streets dressed like a savage. He was a lawyer and member of the council of 500. After having exercised different public functions he wrote a history of his native town (Tournay) consisting of not less than 117 volumes, without order, plan or reason, an undigested mass of documents, full of calumnies, forgetting no one whom he did not like.

Herpain, a Belgian, called Usamer (1848), with a mind unbalanced by ideas of social progress, endeavored to have adopted universally, what he called a physiological language, so that his ideas might be comprehended by every one. He developed his system in an article which he sent in this language to the legislative assemblies of different countries. The following is the Invocation: "As soon as Your Majestic Presence had illumined the nothing, the nothing was made the means of existence. Then you willed to reign favorably over the essences and principles of beings were produced."

Another author dedicates his book on "Demons and Spirits," to all the sovereigns, king, emperors and princes of the four parts

of the world. He held that everything was spirit, as the falling of a cat from the roof, or smoke coming from a chimney.

PHILOSOPHY.

One of the most significant symptoms of mental lack of equilibrium is weakness in that logical faculty upon which philosophy especially depends. For it deals with abstract and speculative subjects, where the mind has less to restrain it from aberrations. Unbalanced persons have produced less intelligible results in philosophy than other subjects.

In 1792 an author of natural history made interesting researches on the antiquity of Brittany, but he developed theories on man, the universe and the spiritual world in eight large volumes called *The New Jerusalem,* in which he claimed to establish an harmonious union of the world of bodies with that of spirits; stating that the spirit of John the Baptist would manifest itself to him on the 26th, and that of Peter on the 30th of June 1861.

Another author (1852) finds in names and dates, seven harmonic laws, which rule in the events of history. He said there would be 278 popes, no more, no less.

Wronski, a Polish philosopher and visionary mathematician (born 1788, died 1853) claimed to have created a universal religion, made over the mathematical sciences and organized politics on a new basis. He placed himself in the attitude of a Messiah and another Newton. He boasted of revealing the definite theory of numbers and giving the solution of the existence of matter in its three states, solid, liquid and fluid of air. The titles of two of his works were as follows: "Messianicism, Final Union of Philosophy and Religion, Constituting the Absolute Philosophy" (Paris, 1831-39, 2. vols. 4°) and "The Political Secret of Napoleon as basis of the future morality of the world" (Paris, 1837, 8°).

Such titles are sufficient to indicate the strangeness of Wronski's ideas.

SCIENCE.

A German physician published (1595) at Leipsic, a book concerning a child born with a golden tooth, which he attributed to the influence of the stars.

Deyraux entitled his book (1855) "Discovery of the Veritable Astronomy, based upon the Law common to Movement of Bodies." In a footnote he says that this important discovery of the true

astronomy can aid investigation and account for the facts. Until this day, he adds, the origin of the facts has been ignored by all ancient and modern astronomers.

A certain member of the Academy of Sciences of Lisbon and Counsellor of the Legation at Paris, in spite of all his titles and honors, must be classed among writers whose compositions are eccentric.

This academician filled his large apartment at Paris with birds in order to study their customs. He finally formulated a theory of determining the physical and moral dispositions of animals according to analogies, dress and colors, entering into details as to feathers and bills. He drew some peculiar conclusions. One was that if speech is wanting to the monkey, it is an advantage, because it preserves his liberty.

A learned and distinguished Orientalist (born 1663) presented the French Academy a memoir in which he claimed to show that Adam was 140 feet in height, Noah 50, Abraham 40 and Moses 25.

Jerome Cardan, a celebrated Italian physician, philosopher and charlatan, claimed the future was revealed to him by dreams and by marks upon his finger nails.

Another Italian physician, confined in an asylum, wrote works in 1496, on the Aristotelian philosophy, but endeavored to prove that Aristotle never existed.

Paracelsus (1536) was an alchemist, physician and philosopher. He was also a charlatan, but with undisputed talent and rambling mind. He wrote some 250 treatises. He peopled the world with demons and geniuses, and affirmed that he was in communication with celebrated personages of the other world.

Another author of a book entitled *The Great Scientific Restauration, Philosophic Mineralogy,"* gave at the end a list of 52 different works, which he announced he would write on scientific questions.

Thomas Wirgman, with a capital of more than $200,000, expended it all for printing his books, which were published in London at the commencement of this century. Not more than twenty copies were ever sold. The title of one of his books was *Grammar of Six Senses,* based upon three ideas, "time, space and eternity." The work was unintelligible. The author was fully convinced that when his ideas were universally adopted they would produce peace and harmony on earth and virtue would take the place of crime. In his application for the chair of philosophy at the University of Lon-

don, he wrote, "So long as I have a breath of life, I will not cease communicating to a new world the source of happiness." He wrote to George IV that if he did not adopt the principles of his books, neither he nor any of his subjects would be saved in the other world. One reason why his works cost him so much money was that he had special paper made and the pages colored differently, sometimes even with two colors on the same page; and when they did not please him, he would have others made.

William Martin entitled one of his works, *A New System of Natural Philosophy on the Principle of Perpetual Motion,* published at Newcastle in 1821.

He said perpetual motion was impossible through machinery, but added, "I had a strange dream....and after awaking was absolutely convinced that I was the man whom Divine Majesty had chosen to discover the great secondary cause of all things and the veritable perpetual motion."

In an introduction to another work, he wishes long life and prosperity to the Ruler of Ireland, who knows that he, William Martin, has "completely effaced Newton, Bacon, Boyle and Lord Bolingbroke."

John Steward (born 1822) had a mania for traveling. He left his business in India, and walked through many parts of the earth. He then wrote books, of which two of the titles are: *Voyages to Discover the Source of Moral Movement* (300 pages) and *Books of Intellectual Life or Sun of the Moral World,* Published in the Year of Common Sense 7000 of the Astronomical History of the Chinese Tables."

In one of his works he places himself above Socrates. In another he claims to be the only man of nature, who has ever appeared in the world. As indicating still greater conceit and mental aberration he had the idea that all kings of the earth were conspiring to destroy his works, and he therefore besought his friends to preserve a few copies, and after wrapping them up carefully, to bury them seven or eight feet under the ground, taking care not to let the place be known until on their death bed, and then only as a secret.

RELIGION.

The aberrations of religious mattoids consist in emotions, passions and instinctive impulsions of the soul. This is a realm almost without limit, where hopes and fears take all forms in the flights of the imagination.

In fanaticism the realities of the material world disappear, not by the flight of reason but because the fanatic believes it is his duty to annihilate it in the interest of his soul. His whole existence is absorbed in his thought, which not only influences his aberrations but modifies all the phases of the external manifestations of his mind. His conjectures have no limit and his doctrines can become so exaggerated by intense enthusiasm or imagination, that they become not only eccentric, but so extreme as to border on insanity. As an illustration we have works such as the one with regard to "the mouth or nose of the glorious Virgin," or a sermon by Baxter of England on "Hooks and Eyes for Believers' Trousers." These are not only eccentric, but vulgar, and sometimes immoral.

A theologian wrote a book to show that the aborigines of South America were the direct descendant of the devil and one of the daughters of Noah, and that consequently it was impossible for South Americans to obtain either salvation or grace.

ISAAC NEWTON.

Isaac Newton in his commentary on Daniel and the Apocalypse (London, 1733) interpreted the expressions of the Hebrew prophets, "one time, two times and a half a time," to mean 1260 solar years, beginning with the year 800 A. D. Newton fixed the destruction of the Papacy in the year 2060. He also attempted to determine the time for the destruction of the world, and the coming of a new world where justice would reign.

It has been asked why such a distinguished mathematician should occupy himself with such visionary ideas. Some say it indicated a decline in his genius; others, that he acceded to the surroundings in which he lived. Philomneste[4] does not accept those reasons, but says that Newton like all men with real genius believed himself invested with a divine mission. This belief increases with age; he sought an expression of it in the prophecies of the Bible where numbers, which had been the joy of his life, played a great rôle.

Peter Leroux, a visionary who mixed philosophical ideas, defined love as "the ideality of the reality of a part of the Infinite Being, reunited to the objectivity of the ego."

William Blake, a talented painter, engineer and poet, who saw and heard supernatural beings, reproduced them in crayon and then engraved them.

[4] *Les Fous littéraires,* Brussels, 1880.

It is surprising that a clear-sighted *juris consul* in his latter days should allow himself to announce that he had received a messianic message.

The author of *Faith Disclosed by Reason in the Knowledge of God, of His Mysteries and of His Nature* (1680, 280 pages) was a grave man and counsellor of the King; nevertheless he was unbalanced, believing he held in his hand the truth of truths. His mental wanderings were unintelligible. He found in matter the three elements of the Trinity: (1) Salt, the generator of things corresponding to God the Father; (2) mercury, where extreme fluidity represents God the Son spread in the whole universe, and (3) sulphur, which by its property of uniting salt and mercury represents the Holy Spirit. His works were condemned.

Gleizes (born 1773, died 1845) wrote works on vegetarianism. He deserted his wife, whom he loved, because she would not cease eating meat. He said meat was atheistic, but fruits contained the true religion, and that vegetables were an antidote for all evils. He left ten volumes.

The writings of aberrated esthetics and mystics constitute many eccentric books, the extravagancies of which have been injurious to religion.

Another religious author fixed six thousand years as the duration of the world, saying that the man of sin, the anti-Christ, would appear in 1912 and rule forty-five years, and be exterminated in 1957.

As an illustration of wisdom mixed with absurdity, there was a distinguished Lutheran theologian of the 17th century who wrote learnedly on New Testament Greek, but subsequently became exalted and prophesied that the end of the world would come in the year 2000.

John Humphrey Noyes, who claimed the gift of prophecy, founded a sect of biblical perfectionists or communists called the Oneida Community. He claimed to have established a divine government on earth, declaring that marriage was a theft and fraud, just as property was. He did not recognize human legislation. Everythinng, including insignificant details, was designated as an inspiration from heaven.

While attending a clinic of Professor Flechsig on insanity at the University of Leipsic, the writer heard an address of a theological student who had become insane. The patient talked about twenty minutes on the doctrines of the Trinity in a most learned

way, insisting that a great error had been made, for instead of three there were really four persons in the Trinity. After finishing his somewhat incomprehensible arguments his last words as he left the room were: "Gentlemen, I am the fourth person."

WRITINGS ON ECCENTRIC LITERATURE.

As the number of writings on eccentric literature is not large, a list of the principal ones is given here:

Achard. *Dictionnaire des Hommes illustres de la Provence,* Marseilles, 1736.
Adelung. *Geschichte der menschlichen Narrheit,* etc., Leipsic, 1785 (7 vols).
American Journal of Insanity, 1848. Illustrations of insanity furnished by letters and writings of the insane.
"Cent et Un." Paris, *L'advocat,* 1832.
Delepierre, Octave. *Histoire littéraire des fous,* London, 1860, pp. 184.
De Bure. *Bibliographie instructive.*
Erdan, M. *La France mystique,* 1858.
Grégoire, B. H. "L'histoire des sectes religieuses," Paris, *L'Intermédiaire des chercheurs et des curieux.*
Mêlanges de littérature maronique, 1852.
Moreau, C. *Bibliographie des Mazarindes.*
Nodier. *Bulletin du bibliophile.*
Oettinger, E. M., *Bedlam littéraire,* 1809.
Philomneste Junior. *Les fous littéraires,* Brussels, 1880, pp. 227.
Polain, Louis A. *Catalogue.* Liège, 1842.
Quérard. *Supercherries littéraires dévoilées.*

ARTHUR MACDONALD.

WASHINGTON, D. C.

THE LOGIC OF LUNACY.

The nature of reason is consistency and we are convinced that all attempts to construct a logic which would stand in contradiction to the old-fashioned so-called Aristotelian logic must necessarily end in failure.

Aristotelian logic can be expanded. A logic of probability may be developed and the rules of inductive logic can be more and more perfected and added to the old trite deductive system of syllogisms. The laws of actual thought have been investigated, a grammar of science has been written, an algebra of logic has been worked out, a logic of relatives has been conceived, a system of logical graphs has been invented, and the names of such men as Leibnitz and Lambert, George Boole, Karl Pierson, Ernst Schroeder, Louis Couturat and Charles S. Peirce are well known as promoters of this new

branch of scientific thought. But so far all their work is an elaboration of the old logic, and no non-Aristotelian logic has yet become recognized.

Nevertheless there is a possibility of tracing the operations of a logic that would not be consistent, a logic that would not recognize the principle of identity, that would reject continuity or ignore the principle of the conservation of matter and energy, a logic of fairyland. This kind of logic contradicts reality and is not consistent with experience except on the conditions of fallacious observation. But fallacious observation and immature judgment are by no means impossible. On the contrary they belong to the most frequent occurrences in the domain of mental activity, and if we recognize provisionally the assumption of fallacious reasoning, we can very well build up systems of thought which would fall into the category of curved logic.

A large field for logic that follows its own line and is characterized by an erratic freedom is found in dreamland. The logic of dreams has been subject to frequent inquiry and many good observations have been made in this special line which is typical for kindred conditions in a waking state. It occurs quite frequently in the psychology of children, in moments of excitement, and generally in hysterical persons.

Consistency is indispensable for any kind of logic and even an inconsistent logic ought to have some rule in its inconsistency. In other words, its inconsistency should be relative and ought to be governed by a principle. To put it bluntly, the inconsistency should be carried out with consistency.

The most extreme form of an inconsistent logic would be the logic of the insane, who, though illogical in the common acceptance of the word, follow in their arguments definite rules, and if we possess the clue to their aberrations, we can foretell the conclusion at which they arrive and also their actions. It stands to reason that in almost every single case there will be method in their madness.

When we bear in mind the consistency with which the insane argue, we feel justified in coining the term "logic of lunacy" and would say that in the sense of the present explanations this term has a deep meaning. A study of the logic of lunacy would form an important branch of psychology as well as abstract logic. It would not be correct logic, but it would be a logic that actually exists and is obeyed according to rules of its own.

There are certain rules in grammar according to which devia-

tions from correct speaking are made by unschooled persons, and the most important source of these errors is false analogy. Lunatic logic similarly obeys the rules of its own false analogy. Alienists know very well that insane people frequently argue as sharply and consistently as sane people but their arguments have a twist. In addition to false analogy they suffer from false generalization and other errors. Similarly a wrong logic dominates the mind of primitive man, whose explanations of nature may appear extremely comical to us and certainly are erroneous, but the savage takes them seriously. From his standpoint, with his limited knowledge, with his lack of discrimination and his wrong application of logical principles, he must fall into exactly those errors, for instance animism and the idea that the planets, because they move, are living and thinking beings. We may call such modes of thinking the logic of primitive man.

A peculiar kind of reasoning underlies the several systems of magic and the main principle is a belief in the efficiency of the symbol. The Indians symbolize rain in a rain dance and are confident that rain will come. A witch burns a wax figure representing the person whom she desires to kill, and she believes that a burning fever will destroy his health.

It will pay the historian to ransack the records of almost all the sciences in their prescientific state for indications of a twisted logic. The very symbols of alchemy are based upon the idea that there are kindred tendencies in different things which for some reason or other have received the same name or have been connected with the same patron divinity whether in the shape of a patron god or a Christian saint. Thus the god Mercury, the metal mercury, the planet, and all that is connected with the name Mercury in any shape are considered akin and in order to produce a desired effect one can be replaced by another. The symbol of Mercury, two serpents twined about a rod, stands for all of them and is as efficient as the objects which it represents.

Prescientific medicine is based on the same principle. A lion's heart produces courage, a hare's leg makes rapid runners, etc. Some of the strongest drugs can be traced back to a primitive conception of the efficacy of certain objects. The logic of astrology belongs to the same class and belief in it has not yet died out, as can be seen by the number of astrological books published and sold at the present time. All fortune telling by cards and otherwise is based on this twisted logic which symbolizes certain events and personal-

ities in the different cards and tries to reproduce an analogous outline of the life of the person who consults the fortune-teller.

How deeply these notions of a twisted logic are rooted in the human mind appears from the fact that a man of such high standing as Schopenhauer was affected by it and seriously believed that the will in its metaphysical quality as will-in-itself can work miracles after the fashion of the ancient magic. The will-in-itself is above time and space and so can break through its limitations. The will can effect others at a distance and a somnabulist can have visions of events distant in time and space. He endorses Bacon's proposition that "magic is practical metaphysics" (*Par. u. Par.*, I, 320 and 283). Indeed Schopenhauer insists that magic effects can be produced with the assistance of symbolic representations, declaring that though physically impossible they can only be explained by metaphysics; that magic has a causality of its own which makes *actio in distans* possible. According to Schopenhauer magic refutes materialism and even naturalism; it throws light on the efficiency of magnetism and would prove that there was a truth in the medieval belief in witchcraft.

One curious form of twisted logic is the identification of thought and being, of statement and objective reality. Ideas are the stuff of our intellectual life. We are made of ideas, and sensations are the actualities of our surroundings. If that is so, we can manufacture our own world, and in a sense this is quite true; but he who can not heed the difference will live in a world of illusions. The Egyptians painted food for the dead in the tombs and the ghosts were supposed to feed on these painted viands. This is quite an original notion and yet it crops out in all other countries among all the nations of the earth, wherever human minds possess a similar twist of logic and wherever their notions as to the nature of the soul are limited.

Why are most of the productions of erratic minds so very similar? Why are there so many circle squarers who are bent on solving a problem whose very significance they do not understand? Why are there so many who agree in general tendencies in their explanations of the meaning of that mysterious book, The Revelation of St. John the Divine? Why are all expositions of theories of this kind so very similar? Their authors mean to be very original and in a sense they are. They try to strike out into new paths which lead away from the common trivial truth which the professional scientist discovers. Yea, the very itching for originality is

typical and so it happens that even this longing and all its several expressions can be classified according to general rules.

Psychologists have here to deal with rules of typical mistakes. The twist in them is that feature which, in its extreme case, is called lunacy, and if a logician would concentrate his mind on false analogies and the other typical twists which dominate these wrong arguments, he would work out what might properly be called the logic of lunacy.

The logic of lunacy might have a very practical application. We would be able not only to understand the mind of an insane person and trace part of his insanity; we would be able not only to see how, from his standpoint, his argument must appear sound, just as in the days of savagery the conclusions of the savage appeared as deep philosophy, but we would also learn how to treat and even cure those who are afflicted with such twists in their logic.

I will conclude these comments with a short anecdote about an alienist whose quickness in comprehending the mind of an insane person saved his life at a critical moment.

In visiting an insane asylum, Dr. R. met at the entrance to the park surrounding the institution, a gentleman to whom he introduced himself, telling him of his desire to visit the asylum. The gentleman welcomed him, introduced himself as the director of the asylum and courteously expressed his willingness to show him around. Having had some talk on insanity, the self-styled director of the asylum led the visitor to a high lookout tower from which the whole institution and grounds could be surveyed. After reaching the top of the tower, this director politely requested his visitor to jump down, and the latter realized at once that he was in the presence of a patient who was on the verge of turning into a maniac. The eyes of the insane man flashed in triumph at having lured his victim to a place from which he could not escape. It was a perilous moment. Escape was impossible, a struggle would have meant death for both, rational argument would be absolutely unavailing. What was to be done? Being accustomed to deal with similar kinds of patients, the alienist remained calm and said quietly, "To jump down from here is nothing extraordinary. I can do something much more remarkable. I can jump up from below. Come along, I will show you." The insane man, attracted by this unique idea and strangely puzzled to know how it could be done, peacefully followed the stranger down the rickety stairs to a place where both were out

of danger. The rest need not be told. At the foot of the tower a warden came along and took charge of "the director."

Human life is full of instances of twisted logic or we might say curved logic: relics of the logic of primitive man, the logic of false analogy, of wrong generalization, of misconception of facts, etc. If we treated these forms of twisted logical theories seriously we could *a priori* develop systems which would be consistent with themselves, but could not be applied to reality. There they would fail because reality has a definite logic which in its applications becomes often very complicated, but is quite plain, quite consistent and let us say straight or even or level in its general principles. I do not mean to say that these original theories of logic are to be condemned and rejected; no, they must be studied and understood. They have their field in the realm of fairy tales and of Utopian romances. They must be taken seriously in the domain of religious mysticism as well as in the symbolic ceremonies of the church. They constitute a world of their own in which another kind of causation is effective and where the mind of man is not bound to respect the character of reality and of natural law, but imposes upon the phantoms of his imagination rules laid down by his own sweet will.

P. C.

THE FETISH OF ORIGINALITY.

"Die Wahrheit war schon längst gefunden,
Hat edle Geisterschaft verbunden;
Das alte Wahre, fass es an!" Goethe.

The notion of spontaneity dies hard. It was at high tide when primitive man read his own abounding vitality into the environment. It has lost caste in these scientific days, and many of us still cling to the belief that we are living in a world of interdependent things, where changes take place not capriciously but according to rule, and where a settled causal order gives us the power both of retrospect and prevision. But the pack of knowledge has been again shuffled, and some are attempting to give us a new deal. So far as the cards have come out, they present unfamiliar signs and pictures that bewilder. We miss, for example, the "things which abide" on which so many of nature's vicissitudes used to be founded; we confront self-originating actions which have no support in objects; indeed, the whole universe, as they tell us, is made up of just such actions

minus things.[1] Substance reappears as an impulse to create, and it is through this *exigence de la création* that chaos passes into cosmos and matter arises. Then the torch of spontaneity is handed on to organisms, making it possible to explain as well as illuminate the mysterious realm of life by what is called *l'élan de la vie,* or *le grand souffle de la vie.* In both inorganic and organic new events constantly start into being; there is an irresistible rush upward and onward of the actions which act; anything old may happen anyhow, something new may suddenly come up anywhen from anywhere. Nature, in a word, is "original." Her supposed link with the past is a scientific superstition soon to be outgrown, and her supposed amenableness to prediction must henceforth rank as crass intellectualism. She is free beyond the wildest dreams of caprice; her wilful products pour forth unceasingly; and it is not her recurrences, her repetitions, her imitations, but her endless "novelties" to which our gaze is directed.

This belief in the spontaneity of nature is of a piece with the idea of self-sufficiency in men. The notion of human originality has survived the exaggerated individualism of the nineteenth century into our own day. The cult of "self-reliance" is still a factor in so-called character-building. We continue to be warned, in various voices and from various quarters, against slavish subservience to inherited modes of action and conventional ways of thought. There is a widespread distrust of "ruts," and a more or less outspoken prejudice against "beaten tracks." The age rings with the praise of originality: It is not the plodding worker, but the man of new ideas who is most in evidence. In art, literature, science, politics, the palm is everywhere awarded to the original mind. There is optimism in this tendency, and its effect in stimulating effort is undoubted. The injunction "Be yourself—do not imitate!" has frequently brought out native powers that might else have slumbered. Even the *délire des grandeurs* must have had its influence upon progress. But how far can the cult of originality make good its claim? To what extent is the individual really self-sourced and spontaneous in his activities? When and where does he cease to be dependent?

Unless all signs are at fault, man himself is an imitation. Not only, by virtue of being an organism, is he separated *toto coelo* from all the forms of non-organic existence; in fundamental characters he at once inherits from and resembles all the living creatures that

[1] Henri Bergson, *L'évolution créatrice.* "Il n'y a pas de choses, il n'y a que des actions" (p. 270).

have preceded him. The worm that crawls and the biped who looks up to the heavens carry on the same physiological processes, however these may differ in complexity and incidence; even the non-locomotive plant shares with the higher order of animal the activities which are needed for self-maintenance. The doings of human beings are similarly linked by the bond of likeness. If man is an expanded model of the lower organic life, he is also an imitation of the individuals who belong to his own society. The activities of daily life, vary as they may from place to place and from occupation to occupation, are connected by deep and subtle resemblances These begin for animal life in periods of rest and wakefulness, of play and food-hunting, of pairing and rearing, estivation and hibernation. For developing man there are the night fire in cave or camp, the division of the bright hours into spaces for work and meals, the daily glow and gloom of the hearthstone, the morning ablution and the evening prayer, the recurring periods of worship and sacrifice, just as for civilized society the week has its theater-going or church attendance, the year its politics and voting, its stock-taking and rent-paying, its fasting and its vacations. Somewhere and somewhen people are always doing the same things, always carrying on activities which, on the ground of common elements, can be grouped into great classes. The functions performed may differ, the actions involved may vary, but under analysis the resemblances only grow more profound, and the unlikenesses more superficial, for both are determined by the structural unity of life itself.

Not only is man an imitation of earlier organisms and of other men, he is an imitator of himself. His most spontaneous actions show the recurrence, in however modified a form, of his activities in the past. Habit is heredity writ large; and the growing ease of a direction once taken, enlisting the whole power of the organism in its favor, ensures those repetitions which Kierkergaard has called "the satisfying bread of daily existence." Meanwhile man is being constantly assimilated to his surroundings and his society. As molecules must resemble each other to form any particular substance, so human individuals must be fundamentally alike in ways of acting and thinking if they are to cooperate. The lower animals are born in an advanced state of fitness for life; men need to be "licked into shape." The process of qualifying them for human society begins with home education, through which speech and customs are passed on by the old to the new generation. The schools simply enlarge this process with a formal training directed, not to the encouragement

of originality, but to the moulding of the individual, in knowledge, conduct and ideals, into likeness with the race. The all-potent assimilating forces of every-day life then come into operation. The individual who would be himself yields submission to his social environment in thousands of ways. He acquires habits that are suggested to him; he accommodates himself to customs; swayed by institutions, he is constantly under the domination of laws. If his modes of life are imposed from without, so are his speech, his ideas, and the general trend of his thought. The current words, the street and newspaper slang of a locality, are put into his mouth. As his behavior is dictated by the "good form" of a particular society, so he is influenced to wear clothes generally like those worn by everybody else. Consciously or unconsciously to himself, his home life is also thus regulated. It is the "proper" furniture, carpets and pictures with which he provides his house. He does not spontaneously choose an Aphrodite of Milo or a statue of Nike for ornaments; these are selected for him, little as he is aware of the fact. His very personality belongs, in part at least, to others. It is subject, as the psychologists show, to more or less permanent modification by every other personality with which he happens to have intercourse. A thinks he is always A, yet when he comes into contact with B he becomes C; when D visits him he mysteriously changes into E, and so on all through the alphabet. All the time, if a self-conscious individualist, he is struggling to be "original"; yet all the time, in spite of, or unknown to himself, he is imitating. Even his mental furnishings are largely dictated by others. A work in the hands of a friend, gossip about the latest novel and its phenomenal success, some printed notice of the week's "best seller," perhaps merely the glittering cover in a bookseller's store—these are among the influences which now and then bind even the sturdiest individualist captive to his *milieu*. As for opinions, he would fain be "original" in them, but the ease of thinking as others think is so alluring, the difficulty of differing from them so disagreeable, that his best laid plans for independent judgments "gang aft agley." The wisest of his conclusions in the most lucid of his intervals are meanwhile buttressed in the judgments of the race.

The larger angles of human life are also being worn down. If the nation is an imitation of previous stages of national existence, repeating, with whatever variations and modifications, the ideas, customs, institutions of those stages, so is the nation more and more an imitation of other nations. In the earlier days of the race, seas,

mountains, rivers, were effective barriers to intercourse, and the separated peoples grew up in an individualism of life and thought, of costume as well as custom, which still lingers here and there in Europe and the Orient. But the science which binds continents together with railways, which pierces mountains and navigates the most distant oceans, bids fair to diminish national "originality" almost to the point of disappearance. Nor is the movement less in evidence where the changes wrought take the direction of progress. Cities catch from each other the methods that make for social and political advance; industrial improvements pass from country to country; new ideas of government, especially of democracy in government, are rapidly becoming the common property and heritage of all the peoples. Yet through it all, whether we call it "standardizing," holding-down, or levelling-up, the process is one which insists on the assimilation of each group to the general life of all the groups. The nation may plume itself on its "originality"—may determine to be itself and only itself. It must yield, and is constantly yielding, to the influences that reach it from without. For it is not in the superficial differences that linger, nor yet in the progressive variations sure to arise, but in the fundamental likenesses which cooperation at once requires and helps to produce, that the hope of a world democracy is bound up.

But there is surely scope for originality in the free life of the spirit, in the products of the mind. Admitted that language itself was a joint creation, the great ideas of the race must have flashed up suddenly in the brain of some supremely endowed individual. How suddenly? The existence and unity of Deity were proclaimed more than 3000 years ago by the Hindu Vedas; at least as ancient is the pantheism which teaches the oneness of God and the world. The conception of an ether system from which all matter arises and to which it returns may be found, in however rude a form, in the *apeiron* of Anaximander. The modern scientific teleology which with Naegeli and Haeckel endows the atoms with elementary feeling, had its anticipation in the hylozoism of the Greeks. Newton's law of the equality of action and reaction was implied in the strife which Heraclitus read into the very constitution of things. The principle of the conservation of energy, "discovered" or experimentally demonstrated by Mayer, Helmholtz, Colding and Joule, may be found in Descartes, Kant, Huygens, and Leibnitz; the earliest suggestions of it date back to Aristotle, who spoke of the maintenance of the whole amid change of the parts, and to Telesius, who traced the

unchanging "mass" of matter to a power of conservation. The atomic theory, which is still the fundamental creed of modern chemistry, was proclaimed by Leucippus and Democritus, who also clearly formulated the causal law which excludes chance from the natural order. The latest and "newest" theory in physics is the electron theory of matter, yet Lord Kelvin in his essay "Aepinus Atomized" traced its main features to Franz Hoch who wrote in 1759. Nor is the doctrine of evolution new in either its general or its special aspects. Not only did ancient thought contain the notion of the origin of life from the inanimate, it adumbrated, however imperfectly, the idea of the progression of life forms through natural selection. Democritus taught that living beings arose from slime, Anaxagoras that organisms came from the damp earth under the influence of warmth. Both Heraclitus and Empedocles announced the germ of Darwinism in their assertion that forms unsuited to the conditions perished, while forms suited to them were maintained.

Perhaps we find more originality in the sciences. Strictly delimited from each other by name and "special" to an extent not altogether good for them, they touch and interpenetrate each other at a thousand points. Proud in their isolated preoccupations, they are borrowers *à haute volée*. Each transmits by a sort of osmosis to the sciences most nearly related to it, and all benefit more or less from the contributions of each. The astronomer must be something of a mathematician and geometer, of a physicist and chemist; the physicist must know something of the inorganic sciences. What would the biologist do without chemistry, the paleontologist without geology, the sociologist without biology, anthropology and linguistics? Is it because science is modern that the sciences are interdependent? Mathematics and geometry come up to us from the dim beginnings of civilization, and despite up-to-date theories of hyperspace, Euclid is still a name to conjure with. We have spectroscopic analysis and heaven-piercing mirrors, yet astronomy was practiced in the ancient worlds of Chaldea, Babylonia, Assyria, and Egypt, and our star maps are still scattered over with Arabic and Latin names. The Chaldeans knew of the phases of Venus over 4000 years before Galilei saw them through his glass; the rotundity of the earth was reasoned out by the Greeks centuries before Magellan's ship circumnavigated the globe. We discuss the ether and its properties, call new compounds to the aid of our industries, watch the process of cell division through our microscopes, and gather endless materials for the sciences of mind and society; yet

there have been physicists, chemists, biologists, psychologists, by whatever names they called themselves, since nature-study began.

The sciences as "applied" ought to yield us the required evidence of spontaneity. Even here the bond with past achievement is unmistakable. Telescope, steam engine, telegraph—all the great "innovations" that impress us in the history of scientific progress—become intelligible only in the light of their historic background. The telescope no more came full-fledged from the brain of an inventor than did the spectacle-glass, and both had centuries of experiment in optics behind them. The magnifying lense focussed the solar ray amid Assyrian darkness, and the sun-dial which tells the bright hours in our summer gardens pointed its shadowy finger to "the time" at least half a century before Christ. The steam-engine was anticipated in the aeoliple of Heron; navigation had the magnetic needle in second-century Cathay; telegraph, telephone and dynamo were implicit in Gilbert and lay in the experiment of Oersted like the statue in the block of marble. The thonged pebble preceded the Nasmyth hammer, as the clepsydra with toothed wheel preceded the clock, and as the rude brick printing of Babylonia preceded the movable types of Forster and Gutenberg. We may call the digging stick of the Australian savage the ancestor of the steam plough; the stone sickle, the roasting tray, and later the tribulum, as Mason reminds us, were the progenitors of the steam harvester. The mechanically driven street carriage gave a good account of itself in pagan times, and one of the labors of Rameses II—to say nothing of Xerxes—anticipated by more than 3000 years the modern canal-piercing operations at Suez and Panama. The Greeks had sails when the Pleiades were named; the seas are still white with canvass.

Will not the wonder-world of machinery give us some glimpse of the innovator depending wholly upon himself? Modern machines are vastly more complex than those known to the ancients, yet they are all products of cooperative effort resting on past achievement, and there is some justification for the claim that they embody a series of improvements rather than a succession of absolutely new creations. "Examine at random," says W. H. Smyth, "any one of half a dozen lines of mechanical invention. One characteristic common to them all will instantly arrest attention. They present nothing more than a mere outgrowth of the manual processes and machines of earlier times. Some operation, once performed by hand tools, is expedited by a device which enables the foot as well as the

hand to be employed. Then power is applied; the hand or foot operation, or both, are made automatic, and possibly, as a still further improvement, several of these automatic devices are combined into one. All the while the fundamental basis is the old, original hand process; hence—except in the extremely improbable event that this was the best method—all the successive improvements are simply in the direction, not of real novelty, but of mere modification and multiplication."

Not only must the new machine, however "original," be founded on experience of all past machines; its "innovation" must take the course traced out for it, on the one hand by the properties of matter and the nature of energy, on the other by the underlying structural unity of all life. It is this unity, and not anything like voluntary choice, which makes man an unconscious imitator of mechanical contrivances first developed by organisms much lower in the scale of existence than himself. Hydrostatic principles are followed in the flow of blood through the arteries and veins; mechanical principles find illustration in the interplay of muscles, sinews and bones; the lever is a large factor in the movements of animals, and there is a ball-bearing at every joint. The awl and the saw were brought to perfection by the boring insect, the beginnings of navigation are to be found in the floating pupa skin of the gnat and the sail of the nautilus. Uncounted ages before the African laid his earth traps, the dark continent was honeycombed with the pitfalls of the ant-lion. The climbing hooks of the tiger-beetle antedated grappling irons, as the scale armor of the armadillo preceded the soldier's cuirass. Poison was used by plant and animal long before the savage tipped his arrows with it; the gymnotus and his congeners invented the electric battery. The lowly fire-fly still outdoes man's highest powers of contrivance with a method of producing light without heat.

If the appeal be made to the fine arts, what does architecture say? Here there is indeed variation from age to age, yet through all mutations due to fashion or taste the laws of stability and proportion persist. Our decorative public buildings continue to remind us of Greece and Rome or of the Middle Ages. What is our "high-style" architecture other than Doric, Ionic, Corinthian, Romanesque, Gothic, Italian, or of endless minglings and modifications of these? No wonder that Fergusson distinguished between "the true and the copying or imitative styles" when he wrote: "It is not perhaps too much to say that no perfectly truthful architectural building has been erected in Europe since the Reformation. . . . In modern designs

there is always an effort to reproduce the style of some foreign country or that of some bygone age—frequently both." Nor is the critic of to-day any the less emphatic. "Since the close of the 18th century," says Arthur L. Frothingham, "there has been no true style anywhere, but simply a series of fashions chasing each other across the background of equally mutable social conditions." "It has been a trouble to many," writes Russell Sturgis, "that in our recent American architecture a whole building, or a large and showy member of a building, should have been so closely copied from some fine old structure in Europe that it is easy of recognition. But those who are greatly exercised about this should not need to be told that such close copying has long been the rule in details. For what purpose are used those large photographs of small details of which every architect has as many as he can afford?....One need hardly fear contradiction in saying that in the majority of cases they are simply used for copying."

Sculpture and painting, essentially imitative arts, have models common to all. If it be said that the originality in this field consists in an unexcelled closeness of imitation, we may fairly ask to have the superiority indicated to us. The modern artist has undoubtedly outdone his predecessor in giving us "real" views of natural objects. But how modern is the realism? Man of the flint-chipping age carved figures on bone with a fidelity to life which anthropologists never tire of admiring. "Nearly every great group of animals," says A. C. Haddon, "is represented in native art, and often so faithfully that it is possible for the naturalist to give the animals their scientific names." Is it. then, in the ideal, the subjective element that we are to find spontaneity? Why have we not surpassed Phidias, Michel Angelo and Canova in sculpture, Raphael and Leonardo da Vinci in painting? Nor is decorative art in any better case. A vast number of our modern patterns in ornamentation are to be found in the art of primitive peoples. The inventors of "new designs" in our art schools and elsewhere make a liberal use of the same natural objects which have served their clan in all the ages.

In music the notion of merely imitative effects seems overwhelmed by the thought of enormous resources of combination. Yet the recombining depends for its newness, so-called, only upon the total structure of the composition, since all compositions consist of series of notes which have been repeated and re-repeated since drums were first sounded and stringed instruments came into ex-

istence. Within the general repetitions, moreover, there are special resemblances which connect the great compositions with the link, not only of heredity, but also of family likeness. The historians of the art are not content merely to ask what Richard Strauss, Brahms, Wagner, Mendelssohn, Chopin, Schumann, even Beethoven would be without Bach. They rearrange the imitations and redistribute the indebtedness. Mozart and Philipp Emanuel Bach are brought in to explain Haydn. Chopin's harmonic system is re-discovered in Wagner. Handel, as well as Bach, reappear in Elijah, the Saint Paul, and the Reformation Symphony of Felix Mendelssohn-Bartholdy. If Beethoven "seems to have included in his mighty symphonies all that had been," the same critic assures us that "in his ninth symphony and last piano sonatas may be found the seeds that sprouted into the luxuriant forests of the Wagner music, and gave birth to the dream-haunted imaginings of Chopin, Schumann and Berlioz." Everywhere we hear the "dominant note" gathering the past to its timbre, but only to sound down again through the ages. "Originality" and indebtedness in music refuse to be disassociated. Note the dedication of a recent book on *Grieg and His Music* to "Edward MacDowell, America's most original composer, who was more influenced by Edvard Grieg than by any other master!"

The chosen home of spontaneity, then, must be literature, since here we recognize the actual workings of the individual mind. The fundamental likenesses of nature and man predestined the family resemblances of *belles lettres* the world over from the beginnings. The Mahabharata tells us all that we need to know of their antiquity. The ancients—India, Greece, Persia, Arabia—have given us not only inspiration, but also style and material. Philostratus, the Athenian, supplied B. C. 170 the original for Ben Jonson's "Song to Celia"; the Book of Job and the old Hindu theater gave Goethe the idea for the Faust prologue. That the Iliad and the Odyssey are the chief sources of all later story writing has become a literary commonplace. It was this universal indebtedness to Homer which led Voltaire to write, "If this father of poetry could recover from his descendants all they have borrowed from him, what would remain of the Æneid, of the Jerusalem Delivered, of Roland, of the Lusiade, of the Henriade, and of all the things of this kind one dare name?" Virgil imitated Theocritus, says M. Benoist, "not only in the choice of subjects, but also in the details of his style and of his personification; he borrows verses sometimes entirely, being content only to translate." And Eichoff adds the accusation that the

great Latin poet copied from his compatriots Ennius, Attius, Catullus, and Nevius.

The moderns begin, but do not end, with the imitation of antiquity. Chénier, says B. de Fougière, "has not a scene which he has not borrowed from the ancients," and it is the opinion of Alfred de Musset that "Greek tragedy, that majestic and sublime ocean, gave birth to both Racine and Alfieri." The "Wasps" of Aristophanes reappear in Racine's "Les Plaideurs," as the fables of Æsop and Phedrus reappear in Gellert, La Fontaine, Kryloff, and Afanassieff. Boccaccio gave rise to a host of imitations, among them the Canterbury Tales of Chaucer, and sixteenth century English poets did not disdain to polish their compositions under the light shed by Dante, Ariosto and Petrarch. Spanish romances were the foundation of Spenser's Faerie Queen, and Spenser himself had an imitator in Phineas Fletcher. Milton looked for sources and suggestions to Homer, Virgil, Tasso, the plays of Pindar, and the Old and New Testament. Renz de Gourman calls Fénelon's "Télémaque," itself a borrowed style, "the most imitated work, phrase for phrase, in all literature." As Shakespeare's "Comedy of Errors" had its source in Plautus, so Corneille's "Cid" has been traced to a Spanish drama by Guillen de Castro. "Dryden's second best play," says Saintsbury, "is built with an audacity to which only great genius or great folly could lead, on the lines of Shakespeare. His longest and most ambitious poem follows with surprising faithfulness the lines of Chaucer. His most effective piece of tragic description is a versified paraphrase—the most magnificent paraphrase perhaps ever written —of the prose of Boccaccio." "The imitation of Pope," according to Edmund Gosse, "grew to be a rage from Sweden to Italy," yet the brilliant Pope was himself an imitator. His "January and May" is a modernized version of Chaucer's "Merchant's Tale"; his "Dunciad" was modelled upon the "MacFlecknoe" of Dryden. If Pope sat at the feet of Horace, Sterne borrowed from Rabelais, Montaigne, and half a dozen others. Defoe studied Bunyan assiduously, "hence the excellence of Robinson Crusoe." In the writings of Charles Lamb look for Sir Thomas Browne, Fuller, Earle and Overbury, Burton and Isaak Walton. And so the story goes on.

How far a great writer who compels others to copy him may himself be a borrower is conspicuously seen in the case of Goethe. "The air which Goethe breathed," says Hermann Grimm, "was filled with Rousseau's spirit; and we have only to compare Werther and Lotte with St. Preux and Julie to be convinced that without

the latter the former would never have been created. The heroes of the "Nouvelle Héloïse" and of Goethe's romance, if their silhouettes could be placed side by side, would be found to coincide line for line. If St. Preux and Werther had met in life they would have regarded each other with the terror with which one meets his double....What Goethe added from his own character and Jerusalem's personality appear only like the accident of custom and situation....It seemed to Goethe as if a special providence had thrown Rousseau's romance into his hands, and he felt compelled to adhere to his model. But not alone for the conception of the characters in Werther is Goethe indebted to Rousseau. He is in fact in quite as great a measure dependent upon him for the color."

The fervid and far-famed Chateaubriand took Bernardin de St. Pierre for his model, yet "you will not find a single page in all our writers," says Sainte-Beuve, "which has not had its germ in Chateaubriand"; and it is to Chateaubriand that Lanson traces Victor Hugo, "alike in his picturesque descriptions, his epic visions, and the use he makes of historic erudition." Jeffrey called Lord Byron "a mere mimic of styles and manners, and a great borrower of external character," adding, "He and Scott, accordingly, are full of imitations of all the writers from whom they ever derived gratification, and the two most original writers of the age who would thus appear to superficial observers to be the most deeply indebted to their predecessors." Yet the wave of Byronic influence not only overwhelmed Pushkin and Lermontoff in Russia, Mickiewicz, Gagarinski and Krasinski in Poland—it moved Victor Hugo, Alfred de Musset and Dudevant in France, and reached Heine in Germany. It was Mickiewicz who once said that Byron was the secret link which bound the whole literature of the Slavs to the West. And if we were to pursue still further this interesting study, we should read of Coleridge lighting his fire from the candle of William Lisle Bowles, of De Quincey "preferring the ornate manner of Jeremy Taylor, Sir Thomas Browne, and their contemporaries," of Shelley embodying in his "Alastor" and the lyrics echoes from Wordsworth and Moore, and of "suggestions which it is difficult to believe that Thackeray did not in the first instance owe to Dickens." "Who," asks A. W. Ward, "would venture to call Capt. Costigan a plagiarism from Mr. Snevellici, or to affect that Wenham and Wagg were copied from Pyke and Pluck, or that Major Pendennis was founded upon Major Bagstock, or the Old Campaigner in the Newcomes on the Old Soldier in Copperfield? But that suggestions were in these,

and perhaps a few other instances, derived from Dickens by Thackeray it would, I think, be idle to deny."

In numerous cases there is affirmation, rather than denial, by the authors themselves. "I copied my personages," says Racine, "from the greatest painter of antiquity—I mean Tacitus; and I was then so full of my reading of this excellent historian that there is scarcely a brilliant touch in my tragedies of which he did not give me the idea." Dr. Johnson told Boswell that his style was founded on Sir William Temple. Southey, writing of his own work, says, "I see in 'The Doctor' a little of Rabelais, but not much; more of 'Tristram Shandy,' somewhat of Burton, perhaps more of Montaigne." "I am neither actor nor poet," Lessing tells us, "but I should be so poor, so short-sighted, if I had not learned in some degree to borrow others' wealth, to warm myself at others' fire, and to strengthen my eyes with the lenses of art." Goethe said to Eckermann one day, "We bring capacities with us, but we owe our development to a thousand influences from the great world out of which we appropriate what we can and what is suited to us. I owe much to the Greeks and the French; my debt to Shakespeare, Sterne and Goldsmith is infinite." John Stuart Mill admits that he rendered his style "at times lively and almost light" by the study of writers "who combined, in a remarkable degree, ease with force," among them Goldsmith and Fielding, Pascal and Voltaire. "Whenever I read a book or a composition that particularly pleased me," says Robert Louis Stevenson, "I must sit down at once and set myself to imitating that quality of propriety or conspicuous force, or happy distinction in style. I was unsuccessful at the commencement of it, but I got some practice in these vain bouts in rhythm, in harmony, in construction, and in coordination of parts. I have thus played the sedulous ape to Hazlitt, Lamb, to Wordsworth, to Browne and Defoe, to Hawthorne, to Baudelaire and to Obermann."

From such salient examples and opinions—the examples offered to suggest an unexhausted wealth of illustrative material, the opinions cited from experts writing with no special view of imitation in mind—it should be evident that spontaneity of product forms but a limited factor in individual achievement. In presence of them the whole edifice of so-called originality crumbles before our eyes as we examine it, but it crumbles only to be built up again on a more reasonable and enduring basis. A foundation of imitation, of repetition, of submission to habit and subjection to convention is required at the outset. The mass of social units must repeat their

community with a close approximation to faithfulness. It is out of the general level thus secured that progressive variations take their rise, and it is among these variations that the claim for at least a relative spontaneity of individual achievement finds its greatest strength. Yet even here, in the common acceptance of the term, originality is not a true, but a pseudo-idea. The law of consciousness itself misleads us into diminishing race contributions and magnifying individual contributions. Not only do differences—variations from the customary—impress the average mind much more profoundly than likenesses, but phenomena in the present are vastly more easy to realize and appreciate than the long elapsed phenomena of the past. It was because the reflective grasp of the intellect matures only slowly that insight into evolutionary processes came late in the history of the race. The hypothesis of the origin of natural products by abrupt and sudden creative acts was a realizable —the only realizable—view of nature in an earlier stage of intellectual development; with the growth of mental power it became crude and unsatisfactory. When men progressed to the idea of metamorphosis by physical change the mind rested for a while in the notion of catastrophic vicissitudes, periodical upheavals that changed the face of the world. It took ages to reach the thought of evolution as the result of very slight changes accumulated through long intervals of time. So in our estimation of human products, it is vastly easier to regard them as arising suddenly and spontaneously as the creation of particular individuals, than to recognize them as the outcome of contributions made by all individuals.

Nor is it only that appreciation of the dependence of the present on the past grows with the progress of the race; the dependence itself is an increasing quantity. It was Comte who said that the longer our species lasts and the more civilized it becomes, the more does the influence of past generations over the present, and of mankind *en masse* over every individual in it, predominate over other forces. With the advancing unification of the race the scope for really "original" achievements by individuals is a diminishing, not an increasing quantity. And this is true in the realm of action, as well as in that of thought. The isolations of the tribe, making the subjection of its members all the more easy, gave opportunities for the development of the "strong man" which are not yielded by modern society. The captain of industry, the prominent statesman, the successful general, conspicuous as their doings may be, achieve results under an increasing control, and must more than every acknowledge

the final domination of the masses whom they are supposed to wield. In the isolation of peoples and races the world had its Ghingis Khans, its Tamerlanes, its Alexanders, its Fredericks; the new international configurations make another Napoleon an impossibility. The old order in science brought forth individual inquirers who knew little or nothing of what others were doing, whereas to-day scientific discoveries, universally diffused, become the common property of all, and the investigators of nature are joined together, not merely by the printing press, but by national and international scientific organizations. The separate compartment method of study so favorable to individual variations in science has also passed for literature. In earlier times, when education was costly and rare, individual writers stood out like giants above the mass of their contemporaries. For the one thus conspicuous we now have hundreds in every large community who can write well and with some degree of literary power. And if we turn to the nations which have given us our greatest books in the past, we find them nurturing, not figures isolated by surpassing gifts, but swarms of able *litterateurs* who compel our attention without always dazzling us with their genius. The danger of our distributed culture is not that it may produce too many great names, but that such few as give promise of appearing will find themselves swamped in the dead level of literary mediocrity.

We have now seen, not only that the "new things" of human contriving are all of them based on older things, but that even the newest of them spring far less from a single personal source than from the individual "originator" plus the whole of his contemporaries and predecessors. Originality is of the race, and not in any valid sense of the individual. The progressive variation subsumes and requires the whole hierarchy of such variations in the past. The ascending step of the innovator is indeed indispensable to advance, but it can be taken only with the whole stairway of previous human progress for its substructure. As the most striking individual traits of the human countenance would be lost in a composite photograph which included all living men, so the individual achievement dwindles into comparative insignificance when viewed against the background of all human achievements. The story of man's dependence upon his kind is really the story of nature writ large. The vibrating electron, the revolving planet, the rushing star, the gathering nebula —these would be powerless and motionless without the universe. The topmost peak that pierces so proudly into the sky requires the

vast bulk of supporting mountain for its elevation; the wave-front which wastes a cliff or destroys a breakwater has the whole length of thundering ocean behind it. The wonderful adaptations of the individual plant would be impossible without the long travail of the species to which it belongs. Is it less reasonable to say that the most brilliant achievement of the human individual receives its impulse and derives its possibility from the total life out of which it also emerges?

Nor does the power of initiative, of self-reliance, lose anything by being regarded not as self-sourced, but as system-sourced. It rather gains immensely from recognition of the mighty reservoir which may be depended upon and drawn from for individual human effort. In the new conception of originality which science has done so much to develop, each man will more than ever look for his salvation to the larger self which is outside; and it is within this wider framework of opportunity that the determination to be "original" will find increased scope for exercise. The individual contribution is to grow rather than diminish, but it will grow just because the streams that feed it flow in from the present and up from the past in ever augmented volume. The progressive variation is to have a value unheard of before, yet its blessing will be multiplied, not by any solitary virtue of the individual, but by the accumulated richness of human powers and the advancing unification of mankind. The innovator most likely to be "original" in the future is not he who, in mistaken independence, lays claim to a lawless spontaneity of production unrelated to the total yield of human effort but the man who, most completely realizing and utilizing that yield, goes forth armed with the whole power of the race.

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BOOK REVIEWS AND NOTES.

THE FIRST GRAMMAR OF THE LANGUAGE SPOKEN BY THE BONTOC IGOROT. With a Vocabulary and Texts, Mythology, Folklore, Historical Episodes, Songs. By *Dr. Carl Wilhelm Seidenadel.* Chicago: Open Court Pub. Co., 1910. Pages i-xxiv; 1-583. 12 full page illustrations; *Addenda Corrigenda*: pp. 587-588.

This monumental work is divided into three parts as follows: Part I, pp. 1-270, Grammar; Part II, pp. 275-475, Vocabulary; Part III, pp. 481-583, Texts. The material was obtained by the author personally from various members of the Bontoc Igorot groups who were on exhibition in Chicago in 1906-1907. These people, who come from the interior of N. Luzon, one of the Phillipine Islands, speak a language whose intricacies and general character it has been reserved for Dr. Seidenadel to present to the scientific world. To state that his task has been well done would be far too meagre a modicum of praise for this painstaking and thorough philological enthusiast who has left no stone unturned in order to make clear, even to his lay readers, the peculiarities of the particular Malayo-Polynesian dialect which he has, we may well say, discovered. He has, however, made little or no attempt to connect the Bontoc Igorot, nor to formulate its relationship, with its sister Austronesian idioms. It will be sufficient in this recension to note some of the main features of the Bontoc-Igorot, as presented by Seidenadel and to comment upon them, so far as the writer of this review feels himself competent to do, from a general philological point of view.

With regard to the phonetics of the dialect, the consonantal interchanges: *f—b; p—b; k—g; t—d; dj—d*, noted, p. 5, are all common to the Malayo-Polynesian group (see especially the Comparative Table in this review).

The glottal check (p. 9), probably identical in sound with the Arabic *'Ayin*, is not indicated by Prof. P. W. Schmidt (*Die Mon-Khmer Völker, Archiv für Anthrop.*, XXXIII, pp. 84-85), but it may be equivalent to the guttural *kh* of some of the Austronesian and Indonesian dialects. A further study of Filipino and kindred idioms might perhaps throw additional light on this point.

The vowel written by Seidenadel *æ*, a fluctuation between *o* and *u*, is clearly allied to Schmidt's *a*, a fluctuation between *ä* and *a* (p. 85). I represent this in the following table by *ö*.

The elements of the Bontoc-Igorot articles *nan, san, si, tja* all appear in other MP. idioms, as in the Malay indefinite *sa*, Formosan Amia *chi*, etc. (see below Table *s.* "One"). I call especial attention to Seidenadel's chapter

on the B. I. ligatures (pp. 14-16), which constitute a system of phonetic copula.

The B. I. substantive, as in all the other MP. idioms, occasionally partially reduplicates for the plural (p. 17). Furthermore, the B. I., like its sister Austronesian tongues, forms its substantive by means of prefixes, infixes, reduplication of the stem, and suffixes (pp. 18 ff.), hereby demonstrating its Austronesian character, as distinct from the Mon-Khmer tongues, described by Schmidt (*op. cit.*). These last mentioned languages, spoken on the Assam Peninsula, Schmidt has shown to be a connecting link between the people of Central Asia and Austronesia. He demonstrates, for example, by exhaustive comparisons (*op. cit.*, pp. 83 ff.), that the roots are essentially the same on the continent and islands and that the chief and fundamental difference between the Austronesian languages and the Indo-Assamese representatives of this group lies in the fact, that the Austronesian tongues seldom use the simple stem as a word, but almost always employ prefixes and infixes, while, in the Indo-Assamese idioms of this family, particularly in the Nikobar and Mon-Khmer, the stem frequently appears as an independent word. Whether the pure root-forms are the original, or whether they constitute a degradation of an older form with additions to the root, it is, as yet, impossible to predicate. Personally, the writer of the present review is inclined to the opinion that the more complicated forms are always the original, or at least are older than the simpler forms, since primitive man probably spoke articulate language, before he was able mentally to arrange an orderly system of grammatical speech. There can be no doubt, however, of the connection between the Malayo-Polynesian group, more especially its Austronesian branch, and the Mon-Khmer, which Schmidt compares with the Nikobar, Santali, Khasi, Bahnar and Stieng dialects.

Bontoc-Igorot has a system of possessive suffixes both for nouns (pp. 34 ff) and verbs (pp. 54 ff), a remnant of which probably original common MP. peculiarity, remains in the simplified Malay: *rumah-ku, rumah-mu, rumah-nya,* "my, thy, his (her, its) house," respectively. In fact, the distinction between the noun (adjective) and the verb in B. I., as in its sister idioms, is not really made, any more than is the case in other primitive speech-types (cf. my papers on the Eastern Algonquin languages in the *Amer. Anthropologist,* and note Seidenadel's remarks, pp. 51 ff.). The noun-adjective or verb in B. I. is a vocable composed of a stem with a prefix, infix or suffix. The B. I. possessive verb (pp. 67 ff.), which is a participialized verbal root with a possessive suffix, or addition, is an excellent illustration of this fact. Here should be noted the existence of an inclusive and exclusive first person plural suffix in B. I., peculiar to other MP. tongues, as well as to certain American idioms (as Algonquin). Of course, in American idioms pronominal incorporation takes place almost invariably by means of prefixation, infixation and suffixation, all of which phenomena do not appear in Malayo-Polynesian.

It will be observed that B. I. actually conjugates its verb according to a complicated system, altering the root materially for the suffix (pp. 74 ff.), as *√kaeb,* "make," but *kápek,* "I make." This seems also to be the case in the Formosan native Austronesian dialects; cf. Paiwan *vaik,* "I go" (cf. Table, s. "go").

Dr. Seidenadel's chapters on prefixation (pp. 109-117) and on the modi-

fying auxiliary (pp. 117-134) are most illuminating. He treats exhaustively the B. I. complex system of modifying verbs (pp. 134-138); negatives (pp. 138-148); the equivalents for relative clauses, expressed usually by participial periphrases, as in other agglutinative languages (pp. 149-158); the indirect question (pp. 177-179); the method of expressing "to be" and the copula (pp. 179-186); "to have" (pp. 187-189); numerals (pp. 189-195); prepositions (pp. 196-222); adverbial expression (pp. 222-232, 233-241); conjunctions (pp. 242-257); conditional sentences (pp. 257-266) and interjections (pp. 267 ff). I cite all these instances, in order to demonstrate how very thoroughly he has done his work.

In connection with his Vocabulary, Part II, pp. 275-475, he very properly warns the student on no account to attempt to use his word-list until the preceding grammatical sections are mastered. It is, however, permissible, I think, for me to attempt to point out by means of the following Comparative Table between B. I. and six other MP. languages, the probable position of Bontoc-Igorot in the Austronesian speech-group. The Formosan material (Paiwan, Tipun, Amia) I have taken from G. Taylor's list which was originally intended to supplement his *Rambles in Southern Formosa*, but which was not published in that work, but later in the *China Review*, XVII, pp. 109-111. This Formosan material is probably approximately correct, owing to its evidently cognate character with the Austronesian languages, Malay, Javanese and the Filipino Tagalog.

	B.-I.	TAG.	JAV.	P.	T.	AM.	MAL.
Ant	*kûyim kûsim*[1]			*sàsek*		*kakunak*	
Ashes	*tjapo*[2]	*saging*		*sàke*	*nasok*	*sàke*	
Banana	*fâlad*			*velivel*	*velivel*	*poule*	
Bird (see Fowl)	*aydyam*			*kaiakaiam*	*kaiam*	*aiam*	
Black	*ngllid*[3]	*niok*		*kutsingel*		*koataengai*	
Blood	*djâla*	*aro*		*diamok*	*thzâra*[4]		*darak*
Body	*awak*	*pakpak*	*awak*		*rarik!*		
Bone	*tônga*		*balong*		*toelang*		*tulang*
Bow	*bandolay* (*Ilocano*)		*panah*			*pana*	*panah*
Butterfly	*akâkob*[4]	*dugo*	*kupu*				*kupukupu*
Cat	*kôshab* (loan word)	*katouan*	*kuching*	*nau*	*nauw*	*pushi*	*kuching*
Child	*dnak*		*anak*		*ilidlak*		*anak*
Cocoanut	*lnyug* (*nlyog*)					*avinong*	
Cold	*lâteng*			*lialâkat*			
Come	*umâliak paallek*		*marein*			*paia*	*mari*

[1] Owing to typographical difficulties I have been unable to indicate any Bontoc-Igorot quantities in the comparative table. P., T. and A. = Paiwan, Tipun and Amia.

"Ant"=*kûyim*: the root *ku* appears in B.-I. and Amia. *Kûsim*, B.-I. has the root *s* in B.-I. and P. *sàsek*.

[2] *Tjapo*. Note here the variations *tj*=*s* (Tag., P., and Am.) with metathetic *nasok*, in T.

[3] *Ngltid*: *ng* common to P. and Am. with metathetic *niok* in Tag. A similar metathesis is seen in B.-I. *Akâkob*; *kob*=*kup* in J. and Mal., but *dugo* in Tag.

[4] *Djâla*. Note the variations *dj*=T. *thz*=P. *di* (palatalization) and Mal. *d* in *darak*.

[5] All foreign words. Note P. and T. *nau*, *nauw*=Chinese *mau* 'cat'.

	B.-I.	TAG.	JAV.	P.	T.	AM.	MAL.
Day	*dkyu*[6]			*kadow*			*hari*
Deer	*ógza*		*ruza*				*ruza*
Dog	*dsŏ*[7]		*asu*	*vatu*	*suan*	*atsu*	
Door	*pánguan*[8]		*lawang*				
Ear	*kŏweng*[9]			*tzalinga*	*tangera*	*tangila*	*telinga*
Egg	*ŧtlog*		*undok*	*katchilo*	*utinun*	*vitaul*	
Eight	*wdlo*	*valo*	*wola*	*valu*	*valu*	*varo*	*delapan*
Eleven	*sinpŏlo ya lsa*	*labing isa*	*sivalas*	*tapulo ita*	*tapulo ita*	*zavou chitsai*	*zapulo satu*
Eye	*matŏ*	*butu*	*moto*	*matsa*	*mata*	*mata*	*mata*
Father	*ŏma*			*ama*	*ama*	*ina*	
Fire	*apuy*			*sapoe*	*apoe*		*api*
Fish	*ikan*			*chikao*			*ikan*
Five (see Hand)	*lima*	*lima*	*lima*	*lima*	*lima*	*lima*	*lima*
Flower	*fénga*			*toalingin*[9]			*bunga*
Foot	*tjapán*	*pa*[10]		*karopupan*		*zaripat*	
Four	*ipát*	*apat*	*papat*	*sipat*	*sipat*	*sipat*	*ampat*
Fowl (see Bird)	*aydyam mŏnok* (chicken)	*momok*		*kaiakaiam*	*kaiam*	*aiam*	
Go	*úmüyak*			*vaik*			
Good	*kawls*[11]					*ngdai*	
Hand (see Five)	*lima*[12]			*lima*	*lima*		
Hard	*inkŏtzŏ*	*malakas*	*kras*	*kutseol*			*krasz*
Head	*ŏlo*[13]	*ulo*		*kuro*			*kapala*
	ténged (back of the head)				*tanguru*[13]		
Hog	*fútug*			*vavui*	*vavui*	*vavui*	*babui*
Honey (see Water) ='water of the bee'.	*tjénæm si yúkan*			*tsaenan* (water?)			
Hundred	*zin lashŏt*					*zimoeout*	
Husband	*asŏ ŏwa ay lalŏki*	*assoua lailaikai*	*assoua*				
Large	*tsaktsŏki*		*gede*[14]	*katsa*		*takai*	
Leaf	*tŏfo*[15]	*dahun*					*daun*
Little	*akit*		*chili*	*kidi*	*makiting*		*kitchil*
Louse	*kŏto*[16]	*kutu*	*kutu*	*kutso*	*kuto*	*kutu*	*kutu*

[6] *Akyu* seems metathetically connected with P. *kadow*. The Mal. *kari* is, no doubt, the same root: *k=k* and *d=r* (?).

[7] The element *su(tu)* appears to mean 'dog'; cf. also Mal. *andj-ing* clearly the same stem, by metathesis *andj=ndja=su(tu)*.

[8] Common stem *ang*.

[9] Common stem *ng*.

[10] There is no connection between these *pa*-stems and the Hind. *pa'on* 'foot'.

[11] Stem *ka=nga*.

[12] Three out of the seven languages here compared regard the hand as a bunch of five (fingers).

[13] *Olo*, *ulo=k-uro*, *kap-ala*. B.-I. *ténged=tan* in T. *tanguru*.

[14] Note J. *ged-e* P. *k-t*=metathetically B.-I. *ts-k*, Am. *t-k*.

[15] B.-I. *tŏfo*=J. *dahun:* i. e., *t=d* and B.-I. *f=h* (*dahun*), seen also between Hawaian *wahini* and Samoan: *fafini* 'woman'. In Mal. *daun*, the aspirate has disappeared.

[16] *Koto:* stem *to* (*s'*); cf. Santali: *se* 'louse' and Mon-Khmer: *chai:* Bantar: *si*, Khasi: *ksi*, the latter with the *k*-Anlaut, as in the forms given above; (cf. Prof. P. W. Schmidt, *Archiv für Anthrop.*, XXXIII. p. 97).

	B.-I.	TAG.	JAV.	P.	T.	AM.	MAL.
Male	*lalâki*			*okadilai*			
Man	*lalâki*	*lalâki*		*okadilai*			*lakilaki*
Mosquito	*kömaæ*		*nyamok*[17]				*nyamok*
Mother	*ina*	*ina*	*mbok*[18]	*kina*	*ina*	*ina*	*ma*[18]
Nail (hand or foot)	*kôko*		*kuku*				*kuku*
Nine	*siam*	*siam*	*sanga*	*siva*	*siva*	*siwa*	*sambilan*
Nose	*lleng*	*ilong*	*idong*				*idong*
Oil (Cocoanut)	*lâna*	*longis*	*lungo*	*liaoliao*	*liaoliao*	*liaoliao*	
One	*isa*	*isa*	*sa*	*ita*	*ita*	*chitsai*[19]	*satu*[19]
Pig (see Hog)							
Rain	*ötjan*	*ulan*[20]	*hudam*	*kumudjel*	*kumudjel*	*ural*	*hudjan*
Rat	*ôtot*					*itu*	
River	*wânga*			*pana*[21]			
Road	*djâlan*	*dam*	*malaku*	*diaran*	*raran*	*lalan*	*jalan*
Saliva	*töbfa*					*supa*[22]	
Salt	*asîn*	*asîn*				*china*	
Seven	*pitô*	*pito*	*pitu*	*pita*	*pita*	*pito*	*tujoh*
Silver	*bîlak*	*pilak*	*perak*		*peso*	*peso*	*perak*
Six	*inim*	*anim*	*nanam*	*unum*	*unum*	*unum*	*anam*
Skin (of buffalo, etc.)	*kôtjil*	*balat*	*kulit*[23]	*kalits*			*kulit*
Smoke	*tjubîdek*			*tsuvuil*		*atsuvuil*	
Sour	*impakashâ-eng*		*asam*[24]		*hasim*	*atchichem*	*masam*
Sun (see Day)	*âkyu*			*kadow*	*kadow*		
Ten	*pôlo*	*sampo*	*pulah*	*pulo*	*pulo*	*pulo*	*sapulo*
Thirty	*tolôn pô'o*	*tallo ampo*	*talupulah*	*tulupulo*	*tulupulo*	*tulupulo*	*tigapulo*
Thousand	*llfo*	*isanlibo*					
Three	*tôlo*	*tallo*	*talu*	*tulu*	*tulu*	*tolu*	*tiga*
Tongue	*djîla*	*dila*	*ilat*[23]		*lidan*[23]		*lidah*
Twelve	*sin pôlo ya djûa*	*labing deloua*	*rolas*	*tapulo nusa*	*tapulo nusa*	*tusa kotsavou*	*sapulodua*
Twenty	*djuân pô'o*	*diouaampo*	*rongpuluh*	*nuzapulo*	*nuzapulo*	*tusapulo*	*duapulo*
Two	*djûa*	*diloua*	*loro*	*nusa*	*nusa*	*tusa*	*dua*
Water	*tjênum*[25]		*banyu*	*lalium*	*ranu*	*nanum*	
Woman[26]	*fafâyi*	*babai*		*vavaien*	*vavaien*	*vavaheian*	*bini* (wife)

The following significant fact then becomes at once apparent. From the eighty of Seidenadel's Bontoc-Igorot words compared and

[17] Metathesis between B.-I.: *kömaaö* and J: *nyamok*.

[18] Note the variant *m* in J. and Malay.

[19] Amia and Malay have the demonstrative elements resp. *chi* and *sa* before the stem *s=t=ts*.

[20] The changes *l=d=dj=r* are common in the MP. languages.

[21] Paiwan: *pana* is the same word as B.-I. *wânga*. There is no connection with Hind *pani* 'water'.

[22] Am. *supa* clearly contains all the elements of B.-I. *töbfa*.

[23] Note the metathesis: *tjil=lit, lits*.

[24] The common stem-elements seem to be sibilant + nasal (*m, ng*); viz., B.-I.: *shêeng=sam=sim=chem*.

[25] The stem denoting 'water' seems to be *n* (*ly, ny*) *u* (*m*).

[26] The stem *fa* appears also in B.-I.: *fa/i si ongonga* 'womb'. This stem *a* clearly= P., T., Am., *va;* also Tag. and Mal. *b*. Note also Hawaian: *wahini;* Samoan: *faîni* 'woman'

discussed herein, it appears that the three Formosan dialects above mentioned preponderate in resemblance to B. I. over Tagalog, Javanese and Malay, there being a hundred and eighteen resemblances to B. I. in Paiwan, Tipun and Amia, as opposed to eighty-four in Tagalog, Javanese and Malay. The following small table will illustrate the number of close and fairly close resemblances to B. I. of the six MP. languages compared in the Comparative Table:

TAG.	JAV.	PAIWAN	TIPUN	AMIA	MALAY	
18	17	21	22	22	16	Close
10	13	23	14	16	10	Fairly Close

I am not prepared to state what conclusion should be drawn from such a phenomenon. Formosa was probably populated originally both from the Chinese side and from the East. It seems possible that the eastern colonists were of an Austronesian substock not far removed from that of the Igorots. A subsequent investigation of other Igorot dialects might throw a valuable light on this subject, and it is to be hoped that Dr. Seidenadel will be able to prosecute his labors still further in this direction.

Dr. Seidenadel's third part (pp. 481-583) consists of texts, all new and valuable from the point of view of folk-lore and linguistics. One could wish that he had also collected the melodies to a few songs, as an illustration of this remarkable people's musical development.

This work stands forth as a noteworthy contribution to the still involved science of the Malayo-Polynesian languages, and Seidenadel's labors cannot be overlooked by any conscientious specialist in this group. What the author's English style here and there lacks (as, for example, p. 277) is amply compensated for by the thorough erudition he has displayed in handling an absolutely new material, collected most expertly by himself.

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TILL DET ANDLIGA LIFVETS FILOSOFI. By *Allen Vannérus.* Stockholm: A. Bonnier.

This work, the latest of a long series of philosophical works by this writer, contains in its preface a criticism of contemporary Swedish philosophy, which the author finds lacking in actuality and life, with "no spiritual energy, no fermenting ideas, no problems under debate, no criticism, nothing actuated by a strong will, much less anything that is struggling forward with spontaneous force." There is no encouragement for philosophical research in Sweden. When not long ago the Rector of the University of Stockholm gave out a statement of the needs of the institution, he did not even mention philosophy, though that subject has no representative on the faculty of the university. "Statistics and other such blessings must come first. This is very natural and consistent. We live in the age of social utilitarianism. 'Social' has a religious meaning. Little houses and gardens where one may go out and dig, that is something holy. (Of course, I do not criticize, I only state facts.) Here we stand before a revolution in the appraisement of material and spiritual values to which there are few counterparts in the world's history. But wait. *Philosophie muss sein.* It is a necessary part of higher spiritual culture." The author feels the need of a philosophical renaissance in Sweden, of a regen-

erating genius, "a great systematician, a representative of the type of Hegel, Comte, Spencer, Wundt."

I have quoted at length from this preface because it brings out, from the author's particular point of view, a feeling that seems to be growing among all classes in Sweden, that an awakening is needed, a stirring up of the national life of the people, a quickening of the social conscience, a feeling that the whole nation is in need of a regenerator, a genius, "coming like a flash" to point the way, upward and inward.

Vannérus's new book is one of a series of works in which he has given a presentation of his philosophical system. The other volumes are: *Filosofiska konturer*, published in 1902; *Vetenskapssystematik*, 1907; *Den empiriska naturuppfattningen*, 1902; *Vid studiet af Wundts psykologi*, 1896; *Kunskapslära*, 1905; here enumerated in the order of their arrangement in the system, the new work having its place as the next to the last. To be complete, the system ought to include two more volumes, a metaphysics, and a theory of values, but these, the author says, he hardly expects to complete. Another task is nearer to his heart, namely to reissue what he has already published in new and revised editions, as parts of a coherent system. As a systematizer Vannérus is unique among Swedish philosophers; no one else has attempted the task which he has brought so near completion. But he does not expect that his philosophy will ever obtain a far-reaching influence. It is, he says, "too abstract and prosaic, has too little of romance and sentiment, it does not carry everything before it, it is not fascinating, not resplendent, nor 'genial,' to quote the common phrases of pretension and resplendence." But he is not without his enthusiasms, though they are intellectual, rather than emotional. He is a representative of that evolutionary idealism which is taking hold of so many in our days who do not feel satisfied with the materialistic naturalism of the last century, but for whom supernaturalism has no attractions. He belongs to the group of thinkers among whom the foremost names are Wilhelm Ostwald and William James. A. G. S. Josephson.

Das Problem des Pythagoras. Von *Dr. H. A. Naber*. Harlem: Visser, 1908. Pp. 239. Price 4 fl.

This famous theorem (Euclid I, 47), which states the fundamental law that the square of the hypothenuse is equal to the sum of the squares of the other two sides, is here restored in its original form and is regarded as the foundation or kernel of the entire Pythagorean system of philosophy. Dr. Naber states that Pythagoras has received a degree of recognition to which even Plato has not attained. His character was unimpeachable, his knowledge all-comprehensive, both theoretical and practical, his teaching an overwhelming whole which began with the motes in a sunbeam and ended only with Olympus. He was fair alike to the natural and the supernatural, and thus was able to become the soul of a republic, a spiritual leader of the highest rank, the head of a nobility which resembled that of the Grail in its high ideals and severe prescriptions. The topics discussed in this volume cover a wide range of subjects dear to the heart of the mathematician. Among many others treated in the forty-odd sections we find the orientation of temples, the value of π, the golden mean, logarithmic spirals, the pyramid of Cheops, the

trisection of an angle, the Limaçon, Abracadabra, the number 5, the tektratys and evolution as taught by Pythagoras.

PSYCHOTHERAPY. By *Hugo Münsterberg*. New York: Moffat, Yard & Co., 1909. Pages 401. Price $2.00 net.

However stringent may be the criticisms brought against Christian Science, and however short may prove its nominal domination over the minds of man, the ultimate judgment of its worth or worthlessness will have to concede that it has served the cause of science and civilization in so far as it has given impetus to the application of psychological principles to the healing of disease. It has awakened both the medical and clerical professions to their responsibilities in determining how far suggestion and other psychical influences should be used to supplement the regular remedial agencies. In the volume before us Dr. Münsterberg discusses for the general public the practical applications of modern psychology in this line. His position is clearly set forth in the concluding paragraph of the Preface:

"The chief aim of this book is twofold. It is a negative one: I want to counteract the misunderstandings which overflood the whole field, especially by the careless mixing of mental and moral influence. And a positive one: I want to strengthen the public feeling that the time has come when every physician should systematically study psychology, the normal in the college years and the abnormal in the medical school. This demand of medical education cannot be postponed any longer. The aim of the book is not to fight the Emmanuel Church Movement, or even Christian Science or any other psychotherapeutic tendency outside of the field of scientific medicine. I see the element of truth in all of them, but they ought to be symptoms of transition. Scientific medicine should take hold of psychotherapeutics now or a most deplorable disorganization will set in, the symptoms of which no one ought to overlook to-day."

P

THE PRINCIPLES OF PRAGMATISM. By *H. Heath Bawden*. Boston: Houghton Mifflin Company, 1910. Pp. 364. Price $1.50 net.

Since even in the minds of professed exponents of pragmatism many contradictory interpretations of its terms and aims have arisen, Mr. H. Heath Bawden sets himself the task of clarifying the meaning of this new philosophy. In nine chapters he goes over the whole field, explaining Philosophy, Experience, Consciousness, Feeling, Thinking, Truth, Reality, Evolution and the Absolute, and Mind and Matter. In our opinion the task is more difficult than the author thinks, for the movement is still in a process of fermentation, and we feel confident that when this stage is over the new philosophy will appear very much less original than now.

As a sample of how the subject is treated we quote the following passages on truth. Mr. Bawden condemns the old definition, saying:

"The ordinary conception of the test of truth regards it as the agreement of the idea with the thing, of perception with the object, of knowledge with reality. This is the naive, unreflective veiw of common sense, known in philosophy as the representative or copy theory of knowledge....It is not uncommon to hear even men of science declare that fact is the test of truth. 'Here are the facts. There is your theory. Test your theory by the facts.'

But it is obvious, upon reflection, that the facts as they are in themselves are a mere abstraction. They have become facts only in the process of knowledge, and cannot therefore be used as an external test of the validity of that process."

Following the pragmatic method he replaces this "naive conception of truth" by the following proposition:

"The criterion is the habit brought to consciousness. The most comprehensive habit or system of habits, taking form in consciousness as an image or idea, is the ultimate standard. Primitive peoples and children have no criterion: they act on impulse. There is little or no reflection or prospection. But in the reflective consciousness the conflict of habits produces the image or idea which becomes an ideal or standard, a guide or norm. An ideal is ordinarily thought of as having reference to an act which is yet to be performed, while a standard is regarded as the test of acts that have already taken place. But in the larger sense, which embraces the reference forward and backward, the standard is only the generalized ideal, while the ideal is the specific definition of the standard."

MEDICINE AND THE CHURCH. By *Sir Clifford Allbutt* and others. Edited with an introduction by *Geoffrey Rhodes*. London: Kegan Paul, 1910. Pp. 298. Price, 6s. net.

This book consists of a series of studies on the relationship between the practice of medicine and the church's ministry to the sick written by English clergymen and physicians of standing and authority. Clearly the purpose of the book is to combat the increasing influence of Christian Science by showing that the same good results may be and are attained by intelligent physicians and the ministry of clergymen, and also to urge further cooperation of these professions to the same end. Ostensibly the main objection made to Christian Science is that although it "undoubtedly does overcome some cases of nervous trouble, these in no sense outweigh the mischief done by its followers in denying the sick medical care;" but the feeling against the cult is strong to the point of bitterness. For instance when the editor says in his introduction that "There is nothing new in Christian Science except the colossal impudence of its pretensions."

The spirit of the book is as a partisan both of the medical profession, that the necessity and value of its ministrations be appreciated, and of orthodox theology, on the ground that the Christian Scientists claim for themselves the power of miraculous healing that was given and belongs only to Christ. The Bishop of Winchester whose advice and aid throughout the compilation is acknowledged by the editor, says in his Foreword that "the temper of our age favors an inquiry conducted in a spirit which will neither disregard the requirements of science, nor rule miracles out of court as impossible." Many of the separate articles are of interest and value as contributions to the literature of mental therapeutics. P

RUDOLF EUCKEN'S KAMPF UM EINEN NEUEN IDEALISMUS. Von *Emile Boutroux*. Uebersetzt von *J. Benrubi*. Leipsic: Veit, 1911. Pp. 32.

Emile Boutroux, the French philosopher who has written this essay on Rudolf Eucken and his struggle for a new idealism, holds a similar position in France to that of his German colleague in Germany, insisting on the

spiritual and intellectual values of life in contrast to the one-sided materialism which would resolve all values of life in material possessions and mechanical accomplishments. Eucken does not want to be classified as a dualistic philosopher. He insists that the purpose of man's life must be sought rather in activity than in material culture, and in seeking and attempting, and daring and doing he finds the significance of life. The main books which mark his career cover the following subjects: The History of Philosophical Terminology (1879); The Fundamental Conceptions of the Present Age (1878, 4th ed. 1909); The Unity of Spiritual Life in Consciousness and in the Activity of Mankind (1888); Great Thinkers' Conceptions of Life (1890, 9th ed. 1911); The Struggle for the Spiritual Content of Life (1896); The True Value of Religion (1905); The Main Problems of the Philosophy of Religion of the Present Age (1907); Outlines of a New World-Conception; and finally The Meaning of Value and Life, which in its third edition appeared in 1911.

Professor Eucken is energetically preparing new books which will soon see the light of publication. They are on The Old and New Christianity and a Theory of Cognition. Many of his books have been translated into English, and he had several invitations to lecture in London and Oxford on philosophical and religious problems. His topic for a recent address delivered on the invitation of the Unitarians was *Religion and Life.* K

ALLGEMEINE GESCHICHTE DER PHILOSOPHIE MIT BESONDERER BERÜCKSICHTIGUNG DER RELIGIONEN. Von *Dr. Paul Deussen.* Leipsic: Brockhaus, 1911. Pp. 530. Price 6 M., cloth 8 M.

The first volume of this General History of Philosophy was reviewed in *The Monist* some time ago, and we now announce the publication of the first part of the second volume. Readers familiar with the philosophical literature of to-day are aware that Professor Deussen represents a metaphysical conception in philosophy which attributes an objective reality to the *atman,* to the Vedanta philosophy, to the Platonic ideas of ancient Greece and to Kant's things-in-themselves. This explains the feeling of sympathy by which he is induced to classify Jacob Boheme's philosophy as a kind of Vedantic pluralism. We cannot say that Professor Deussen ever followed Professor William James's pragmatism, nor is his pluralism kin to the pluralism of that great American pragmatist, but he has a pluralism of his own after the prototype of the Vedantic theory which recognizes the existence of innumerable souls finding a unit in the universal *atman* which might be called in Emerson's language the "oversoul."

In contrasting the subject of his first volume to the treatment of Greek philosophy discussed in the second volume, Professor Deussen says in the preface: "The Indian has penetrated more deeply into the problems of existence, whereas modern thinkers are more scientific and rigorous; but more beautiful, more luminous, more brilliant philosophy has never been than on the Ionian coasts of Asia Minor and on the shores of Ilissos."

This volume covers the several periods of Greek thought. The origin of Greek philosophy—the oldest period, the second period including Plato and Aristotle, and the post-Aristotelian period, the theories of the Epicureans, the Skeptics, the Eleatic philosophies, the Jewish-Alexandrian school, and

neo-Platonism before and after Plotinus. The work is done with care and precision and we have no doubt that the appearance of this volume will be welcome to Professor Deussen's many friends and followers. K

DIE BEGRIFFE UND THEORIEN DER MODERNEN PHYSIK. Von *J. B. Stallo.* Uebersetzt von *Dr. Hans Kleinpeter.* 2d ed. Leipsic: Barth, 1911. Pp. 328. Price 7 marks.

EINFÜHRUNG IN DIE METAPHYSIK AUF GRUNDLAGE DER ERFAHRUNG. Von *Dr. G. Heymans.* Leipsic: Barth, 1911. Pp. 364. Price 9 marks.

We announced some time ago the appearance of this German translation of J. B. Stallo's *Modern Physics,* a book of extraordinary importance, containing a preface by Professor Ernst Mach. We are now in possession of a second edition, and we are glad to see that the new world-conception of a scientific philosophy is finding more and more recognition in the Fatherland.

The same house announces the second enlarged edition of Dr. G. Heymans's "Introduction to Metaphysics." Dr. Heymans, professor of philosophy at the University of Groningen, Holland, defines metaphysics as that science which endeavors to propound "the most complete and least relative world-conception possible." Cognition means "to have conceptions which agree with their objects and which we think of as agreeing with them." Heymans discusses realism and dualism, first in their state of naïveté and then as scientifically derived theories. He contrasts them first with a monistic materialism and then with a realistic parallelism. After a review of agnosticism and positivism, he establishes a psychical monism. He finds that all rival theories by a critical development lead to the same conclusion and then ends with the applications of his philosophy to epistemology, ethics, and a philosophical consideration of religion. K

DER MONISMUS UND SEINE PHILOSOPHISCHEN GRUNDLAGEN. Von *Friedrich Klimke, S. J .* Freiburg i. B.: Herder, 1911. St. Louis, Mo., B. Herder. Pp. 620. Price $3.80 net.

Friedrich Klimke, S. J., the philosopher among the Jesuits, offers this book as a contribution to a criticism of modern thought, and it goes without saying that he condemns modernism in its very principles. Nevertheless he allows monism to stand as a methodological postulate and as an ideal of cognition. Metaphysical monism, however, in whatever form it may be presented finds its refutation. It is is perhaps characteristic that the book knows nothing of monism in the United States. The existence of *The Monist,* as well as all the publications of the Open Court Publishing Comany are ignored. Haeckel figures conspicuously as a target for refutation.

The writings of the Italian pragmatist G. Vailati, who died two years ago, May 14, 1909, have been collected under the title *Scritti di G. Vailati,* and published in Leipsic by Johann Ambrosius Barth, and in Florence by the successors of B. Seeber in the current year of 1911. They cover a period from the year 1863 to 1908. The book is an enormous royal octavo volume of 972 pages. For its enormous bulk the price is comparatively small, being only 15 francs. K

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THE MONIST

THE PHILOSOPHY OF MR. B*RTR*ND R*SS*LL.

WITH APPENDIXES OF LEADING PASSAGES FROM CERTAIN OTHER WORKS.

"Even a joke should have some meaning."
The Red Queen, *T. L. G.*, p. 170.

[EDITOR'S NOTE.—When Mr. B*rtr*nd R*ss*ll, following the advice of Mr. W*ll**m J*m*s, again got into touch with reality, and was torn to pieces by anti-suffragists, many of whom were political opponents of Mr. R*ss*ll, and held strict views on the necessity of protection, the following manuscript, which was almost ready for the press, was fortunately saved from the flames on the occasion when a body of eager champions of the Lost Cause of the Sacredness of Personal Property, from the city of Oxford, burnt the late Mr. R*ss*ll's house in B*gl*y W**d.]

ABBREVIATIONS:

A. A. W. Lewis Carroll, *Alice's Adventures in Wonderland.* London: Macmillan, 1905. People's Edition, 140th thousand.

T. L. G. Lewis Carroll, *Through the Looking-Glass, and What Alice Found There.* London: Macmillan, 1905. People's Edition, 87th thousand.

S. B. Lewis Carroll, *Sylvie and Bruno.* London: Macmillan, 1889.

Ph. L. Bertrand Russell, *A Critical Exposition of the Philosophy of Leibniz, with an Appendix of Leading Passages.* Cambridge: University Press, 1900.

Pr. M. Bertrand Russell, *The Principles of Mathematics,* Vol. I. Cambridge: University Press, 1903.

A. d. L. Ernst Schröder, *Vorlesungen über die Algebra der Logik.* Leipsic: Teubner, Vol. I, 1890; Vol. II, 1891 and 1905.

Gg. G. Frege, *Grundgesetze der Arithmetik.* Jena: Hermann Pohle, Vol. I, 1893; Vol. II, 1903.

Z. S. G. Frege, *Ueber die Zahlen des Herrn H. Schubert.* Jena, 1899.

Gl. G. Frege, *Die Grundlagen der Arithmetik, eine logisch-mathematische Untersuchung über den Begriff der Zahl.* Breslau, 1884.

R. M. M. *Revue de Métaphysique et de Morale.*

S. L. John Venn, *Symbolic Logic.* London: Macmillan, 1881; 2d ed., 1894.

F. L. Augustus De Morgan, *Formal Logic; or The Calculus of Inference, Necessary and Probable.* London, 1847.

Fm. L. John Neville Keynes, *Studies and Exercises in Formal Logic.* 4th ed., London, 1906.
E. u. I. Ernst Mach, *Erkenntnis und Irrtum. Skizzen zur Psychologie der Forschung.* 2d ed., Leipsic, 1906.
G. u. E. G. Heymans, *Die Gesetze und Elemente des wissenschaftlichen Denkens.* Leiden, Vol. I, 1890; Vol. II, 1894.
A. C. P. *The Annotated Book of Common Prayer,* ed. by John Henry Blunt, D. D. New Edition. London: Rivingtons, 1888.

THE INDEFINABLES OF LOGIC.

THE view that the fundamental principles of logic consist solely of the law of identity was held by Leibniz,[1] Drobisch, Ueberweg,[2] and Tweedledee.[3] If this were the case, the principles of logic could hardly be said to be, as they are, a body of propositions whose consistency is impossible to prove.[4] This characteristic is important and one of the marks of the greatest possible security; for while a great achievement of late years has been to prove the consistency of the principles of arithmetic, a science which is unreservedly accepted except by some empiricists,[5] it can be proved formally that one foundation of arithmetic is shattered.[6] It is true that it has been shown quite lately that this conclusion may be avoided, and by a re-moulding of logic we can draw instead the paradoxical conclusion that the opinions held by common sense for so many years are in part justified; but it is quite certain that with the principles of logic no such proof of consistency and no such paradoxical result of further investigations are to be feared.

Still, this re-moulding has had the result of bringing logic into tolerable agreement with common sense. There

[1] Russell, *Ph. L.*, pp. 17, 19, 207-208.
[2] Schröder, *A. d. L.*, I, p. 4.
[3] See Appendix A.
[4] Cf. Pieri in *R. M. M.*, March, 1906, p. 199.
[5] As a type of these, Humpty-Dumpty, with his inability to admit anything not empirically given, and his lack of comprehension of pure mathematics, may be taken (See Appendix B). In his (correct) thesis that definitions are nominal, too, Humpty-Dumpty reminds one of J. S. Mill (see Appendix C).
[6] See Frege ,*Gg.*, II, p. 253.

were only two alternatives: If we chose principles in accordance with common sense we arrived at conclusions which shocked common sense; by starting with paradoxical principles, we have arrived at ordinary conclusions. Like the White Knight,[7] we have dyed our whiskers an unusual color and then hidden them.

The quaint name of the "Laws of Thought" which is often applied to the principles of logic, has given rise to confusion in two ways: In the first place the "Laws," unlike other laws, cannot be broken, even by refusing to think; and in the second place people think that the laws have something to do with holding for the operations of their minds, just as laws of nature hold for events in the world around us.[8] But that the laws are not psychological laws follows from the facts that a thing may be true even if nobody believes it, and something else may be false if everybody believes it. Indeed it generally is.

Fortunately, the principles or laws of logic are not a matter of philosophical discussion. Idealists like Tweedledum and Tweedledee, and even practical idealists like the White Knight, explicitly accept laws like the law of identity and the excluded middle, as we have seen above or shall see in the Appendix, under E.

In fact, throughout all logic and mathematics, the existence of the human or any other mind is totally irrelevant; mental processes are studied by means of logic, but the subject-matter of logic does not presuppose mental processes, and would be equally true if there were no mental processes, It is true that in that case we should not know logic; but our knowledge must not be confounded with the truths which we know, any more than an apple should be with the eating of it.[9]

[7] See Appendix D.

[8] See Frege, *Gg.* I, p. xv.

[9] B. Russell, *Hibbert Journal*, July, 1904, p. 812.

IDENTITY.

Identities are frequently used in common life by people who seem to imagine that they can draw important conclusions respecting conduct or matters of fact from them. I have heard of a man who gained the double reputation of being a philosopher and a fatalist by the repeated enunciation of the identity, "Whatever will be, will be"; and the Italian equivalent of this makes up an appreciable part of one of Mr. Robert Hichens's novels. Further, the identity "life is life" has not only been often accepted as an explanation for a particular way of living, but has even been considered by an authoress who calls herself "Zack" to be an appropriate title for a novel; while "business is business" is frequently thought to provide an excuse for dishonesty in trading, for which purpose it is plainly inadequate.

Another example is given by a poem of Mr. Kipling's, where he seems to assert that "East is East" and "West is West" imply that "never the twain shall meet." The conclusion, now, is false; for, since the world is round—as geography books still maintain by arguments which strike every intelligent child as invalid[10]—what is called the "West" does, in fact, merge into the "East." Even if we are to take the statement metaphorically it is still untrue, as the Japanese nation have shown.

The law courts are often rightly blamed for being strenuous opponents of the spread of symbolic logic; the frequent misuse of *and, or, the,* and *provided that* in them is notorious. But the fault seems partly to lie in the uncomplicated nature of the logical problems which are dealt

[10] The argument of the hull of a ship disappearing first is not convincing, since it would equally well prove that the surface of the earth was, for example, corrugated on a large scale. If the common sense of the reader were supposed to dismiss the possibility of water clinging to such corrugations, it might equally be supposed to dismiss the possibility of water clinging to a spherical earth. Traditional geography books, no doubt, gave rise to the opinions held by Lady Blount and the Zetetic Society.

with in them. Thus it is no uncommon thing for people to appear there who are unable to establish their own identity, or for A to assert there that B was not himself when he made a will leaving his money to C.

The chief use of identities is in implication. Since, in logic, we so understand *implication* that any true proposition implies and is implied by any other true proposition, if one is convinced of the truth of the proposition Q, it is advisable to choose one or more identities (P), whose truth is undoubted, and say that P implies Q. Thus Mr. Austen Chamberlain, according to the *Times* of March 27, 1909, professed to deduce the conclusion that it is not right that women should have votes from the premises that "man is man" and "woman is woman." Unfortunately this method requires that one should have made up one's mind about the conclusion before discovering the premises—by what, no doubt, Jevons would call an inverse or inductive method. Thus the method is only of use in speeches.

Mr. Austen Chamberlain afterwards rather destroyed one's belief in the truth of his premises, by putting limits to the validity of the principle of identity. In the course of the debate on the Budget of 1909, he maintained, against Mr. Lloyd George, that a joke was a joke except when it was an untruth, Mr. Lloyd George, apparently, being of the opinion that a joke is a joke under all circumstances.

SYMBOLISM AND MEANING, AND SIGN AND SIGNIFICATION.

When people write down any statement such as "The curfew tolls the knell of parting day," which we will call "C" for shortness, what they mean is not C but the *meaning* of C; and not "the meaning of C" but the *meaning* of "the meaning of C." And so on *ad infinitum*. Thus in writing or in speech we always fail to state the meaning of any proposition whatever. Sometimes, indeed, we succeed in *conveying* it; but there is danger in too great a

disregard of statement and preoccupation with the conveyance of meaning. Thus many mathematicians have been so anxious to convey to us a perfectly distinct unmetaphysical concept of number, that they stripped away everything that they considered unessential (like its logical nature) from the idea of number, and have finally delivered it to us as a mere *sign*. By the labor of Helmholtz, Kronecker, Heine, Thomae, Pringsheim and Schubert, many people were persuaded that when they said "2 is a number" they were speaking the truth, and hold that "Paris" is a town containing a *p*.[11] When Frege pointed out this difficulty, e. g., in *Z. S.*, he was almost universally denounced as "*spitzfindig*." In fact, Germans seem to have been influenced by Kant to despise the White Knight's subtle distinctions[12] and to regard subtlety with disfavor to such a degree that their only mathematical logician except Frege, namely Schröder—the least subtle of mortals, by the way—seems to have been filled with such fear of being thought subtle, that he made his books so prolix that nobody has read them.

Another term which mathematicians are accustomed to apply to thought which is more exact than any to which they are accustomed is "scholastic." Thereby, I suppose, they mean that the pursuits of certain acute people of the Middle Ages are unimportant as compared with the great achievements of modern thought, as exemplified by a method of making plausible guesses, known as induction; by the bicycle and the gramophone—all of them instruments of doubtful merits.

[11] De Morgan (*F. L.*, pp. 246-247) said that "if all mankind had spoken one language, we cannot doubt that there would have been a powerful, perhaps universal, school of philosophers who would have believed in the inherent connection between names and things; who would have taken the sound *man* to be the mode of agitating the air which is essentially communicative of the ideas of reason, cookery, bipedality, etc.,.... 'The French,' said the sailor, 'call a cabbage a *shoe*; the fools! Why can't they call it a cabbage when they must know it is one?'"

[12] See Appendix E.

PREVIOUS PHILOSOPHICAL THEORIES OF MATHEMATICS BY MATHEMATICIANS.

Mathematicians usually try to found mathematics on two principles. One is the principle of confusion between the sign and the thing signified (they call this principle the foundation-stone of the formal theory), and the other is the principle of the identity of discernibles (which they call the principle of the permanence of equivalent forms).[13]

But the truth is that if we set sail on a voyage of discovery with logic alone at the helm, we must either throw such principles as "the identity of those conceptions which have in common the properties that interest us" and "the principle of permanence" overboard, or, if we do not like to act in such a way to old companions with whom we are so familiar that we can hardly feel contempt for them, we must at least recognize them clearly as having no logical validity and merely as psychological principles, and reduce them to the humble rank of stewards to minister to our human weaknesses on the voyage. And then, if we adopt the wise policy of keeping our axioms down to the minimum number, we must refrain from creating, or perhaps rather thinking we can create, new numbers to fill up gaps among the older ones, and then recognize that our rational numbers are particular cases of "real" numbers, and so on.

We get, by this, a world of conceptions which looks, and is, different from that which ordinary mathematicians think they see; and perhaps this is the reason why some mathematicians of great eminence, like Hilbert and Poincaré,[14] have produced such absurd discussions on the fundamental principles of mathematics, showing once more

[13] These principles, after many attempts to state them by Peacock, the Red and the White Queen (see Appendix G), Hankel, Schröder, and Schubert had been made, were first exactly formulated by Frege in *Z. S.*

[14] See Couturat, *R. M. M.*, March, 1906, and Russell, *ibid.*, Sept. 1906.

the truth of the not quite original remark of Aunt Jane, who

> ".....observed, the second time
> She tumbled off a 'bus:
> 'The step is short from the sublime
> To the ridiculous.'"

AMBIGUITY AND SYMBOLIC LOGIC.

The universal use of some system of symbolic logic would not only enable everybody easily to deal with exceedingly complicated arguments, but would prevent ambiguous statements. In denying the indispensability of symbolic logic in the former state of things, Dr. Keynes (*Fm. L.*) is probably alone,[15] against the need strongly felt by Alice and most modern logicians. (See Appendix H).

As regards ambiguity, a translation of *Hymns Ancient and Modern* into, say, Peanese, would prevent the well-known puzzle of childhood as to whether the "his" in

> "And Satan trembles when he sees
> The weakest saint upon his knees,"

refers to the saint's knees or Satan's.

ASSERTION.

The subject of the present chapter must not be confused with the assertions of ordinary life. Commonly an unasserted proposition is synonymous with a probably false statement, while an asserted proposition is synonymous with one that is certainly false. But in logic we apply assertion also to true propositions and, as Lewis Carroll showed in his version of "What the Tortoise said to Achilles,"[16] usually pass over unconsciously an infinite series of implications in so doing. If p and q are propositions,

[15] The Duchess is more consistent than Keynes, for Keynes really uses the $\times$ and $+$ of Boole and Venn under the different shapes of the words "and" and "or."

[16] *Mind*, New Series, Vol. IV, 1895, pp. 278-280. Cf. Russell, *Pr. M.*, p. 35.

p is true and p implies q; then, at first sight, one would think that one might assert q. For, from (A) "p is true," and (B) "p implies q," we must, in order to deduce (Ω) "q is true," accept the hypothetical (C) "If A and B are true, Ω must be true." And then, in order to deduce Ω from A, B, C, we must accept another hypothetical (D) "If A, B, and C are true, Ω must be true"; and so on *ad infinitum*. Thus, in deducing Ω, we pass over an infinite series of hypotheticals which increase in complexity. Thus we need a new principle to be able to assert q.

Frege was the first logician sharply to distinguish between an asserted proposition, like "A is greater than B," and one which is merely considered, like "A's being greater than B," although an analogous distinction had been made in our common discourse, on certain psychological grounds, for long previously. In fact, soon after the invention of speech, the necessity of distinguishing between a considered proposition and an asserted one became evident, on account of the state of things referred to at the beginning of this chapter.

IS.

Is has four perfectly distinct meanings in English, besides misuses of the word. Among the misuses, perhaps the most important are those referred to by De Morgan:[17] ". . . . we say 'murder *is* death to the perpetrator' where the copula is *brings*; 'two and two *are* four,' the copula being 'have the value of,' etc."

Schröder[18] quite satisfactorily pointed out the well-known distinction between an *is* where subject and predicate can be interchanged (such as: "the class whose members are Shem, Ham, and Japhet is the class of the sons of Noah") and an *is* or *are* where they cannot (such as:

[17] *F. L.*, p. 268.
[18] *A. d. L.*, I.

"Englishmen are Britons"), but failed to see[19] the more important distinction (made by Peano) of *is* in the sense of "is a member of." If Englishmen are Britons, and Britons are civilized people, it follows that Englishmen are civilized people; but though the *Harmsworth Encyclopaedia* is a member of the class "books (of one or more volumes)," and this class is the member of some class A of which it is the only member, yet the *Harmsworth Encyclopaedia* is not a member of A, for it is not true that it is the whole class of books; and such a statement would not even be made, except possibly in the form of an advertisement.

The fourth meaning of *is* is *exists*; it is a matter for regret that there are difficulties in the way of using one word to denote four things with different meanings; for, if there were not, we might prove the existence of Anything by making It the subject of a proposition, and thus earn the gratitude of theologians.

"AND" AND "OR."

When, with Boole, alternatives (A, B) are considered as mutually exclusive, logical addition may be described as the process of taking A *and* B or A *or* B. It is a great and rare convenience to have two terms for denoting the same thing: commonly, people denote several things by the same term, and only the Germans have the privilege of referring to, say, continuity as *Stetigkeit* or *Kontinuirlichkeit*. But Jevons[20] quoted Milton, Shakespeare, and Darwin to prove that alternatives are not exclusive, and so attained first to recognized views by an argument which was plainly inadequate for his purpose.

Of course, "and" is often used as the sign of logical addition: thus one may speak of one's brothers and sisters,

[19] *Ibid.*, II.

[20] *Pure Logic,...*, London, 1864, pp. 76-79. Cf. Venn, *S. L.*, 2d ed., pp. 40-48.

without being understood to mean the null-class (as should be the case).[21] And a word like "while" is often used for a logical addition, when exclusiveness of the alternatives is almost implied. Thus, a reviewer in *Mind*,[22] noticing the translation of Mach's *Popular Science Lectures* into American, said, of these lectures, that: "Most of them will be familiar....to epistemologists and experimental psychologists; while the remainder, which deal with physical questions, are well worth reading." The reader has the impression, probably given unintentionally, that Professor Mach's epistemological and psychological lectures are not, in the reviewer's opinion, worth reading.

THE COMMUTATIVE LAW.

Often the meaning of a sentence tacitly implies that the commutative law does not hold. We are all familiar with the passage in which Macaulay pointed out that by using the commutative law because of exigencies of meter, Robert Montgomery unintentionally made Creation tremble at the Atheist's nod instead of the Almighty's. This use of the commutative law by writers of verse renders it doubtful whether, in the hymn-line:

"The humble poor believe,"

we are to understand a statement about the humble poor, or a doubtful maxim as to the attitude of our minds to statements made by the humble poor.

Then non-commutativity to English titles offers difficulties to some novelists and Americans, who make a point of referring to Mary Lady So-and-So as Lady Mary, and *vice versa*.

[21] Children sometimes pray for their relations *and* friends; two plainly exclusive classes.

[22] New Series, IV, p. 261.

THE.

The word "the" implies existence and uniqueness. It is a mistake to talk of "*the* son of So-and-So" if So-and-So has a fine family of ten sons. People who refer to "the Oxford Movement" imply that Oxford only moved once; and those quaint people who say that "A is quite the gentleman" imply both the doubtful proposition that there is only one gentleman in the world, and the indubitably false proposition that he is that man. Probably A is one of those persons who add to the confusion in the use of the definite article by speaking of his wife as "the wife."

In a certain children's hymnbook, one reads:

"The river vast and small."

Few would deny that there is not more than one such river, but unfortunately it is doubtful if there is such a river at all. The case is exactly the same with the ontological proof of the existence of the most perfect being.

According to the *Daily Mail* of October 9, 1906, Judge Russell decided against a claim brought by an agent against his company for appointing another agent, the claim being on the grounds that he was appointed as "the" agent.

Most people admit that the number 2 can be added to the number 2 to give the number 4, but this is a mistake. They concede, when they use *the*, that there is only one number 2, and yet they imagine that, when they remove this, to consider it apart as the first term of our above sum, they can find another to add to it, and thereby form the second term. The truth is, that "2+2=4" is a very misleading equation, and what we really mean by that faultily abbreviated statement is: If x and y denote any things, and x' and y' any other things, which form a class (A) which, like that of x and y, is a member of that class (which we call "2"), of classes which have a correspond-

ence with what we call a class B of two things, such that, if any member of A corresponds to one, and only one, member of B, and inversely; for the class of all the terms x, y, x', y' is a member of that class of classes which, analogously, we call "4." In this, for the sake of shortness, we have introduced abbreviations which should not be used in a rigorous logical statement.

UNIVERSAL AND PARTICULAR PROPOSITIONS.

People who are cynical as to the morality of the English are often unpleasantly surprised to learn that "All trespassers will be prosecuted" does not necessarily imply that "Some trespassers will be prosecuted." The view that universal propositions are non-existential is now generally held. Venn seems to have been the first to hold this, while older logicians, such as De Morgan,[23] considered universal propositions to be existential, like particular ones.

If the Gnat[24] had been content to affirm his proposition about the means of subsistence of a Bread-and-butter-fly, in consequence of their lack of which such flies always die, without pointing out such an insect, and thereby proving that the class of them is not null, Alice's doubt as to the existence of the class in question, even if it were proved to be well-founded, would not have affected the validity of the proposition.

This brings us to a great convenience in treating universal propositions as non-existential. We can maintain that all x's are y's at the same time as that no x's are y's, if only x is the null-class. Thus when Mr. MacColl[25] objected to other symbolic logicians that their premises imply that all Centaurs are flower-pots, they could reply that

[23] Cf. *F. L.*, p. 4.
[24] See Appendix I.
[25] Cf. *Mind*, 1905.

their premises also imply the more usual view that Centaurs are not flower-pots.

IMPLICATION.

A good illustration of the principle that what we call "implication" in logic is such that a false proposition implies any other proposition, true or false, is given by Lewis Carroll's puzzle of the three barbers.[26]

Allen, Brown, and Carr keep a barber's shop together; so that one of them must be in during working hours. Allen has lately had an illness of such a nature that, if Allen is out, Brown must be accompanying him. Further, if Carr is out, then, if Allen is out, Brown must be in for obvious business reasons. The problem is, may Carr ever go out?

Putting p for "Carr is out," q for "Allen is out," and r for "Brown is out," we have:

(1) q implies r,

(2) p implies that q implies not-r.

Lewis Carroll supposed that "q implies r" and "q implies not-r" are inconsistent, and hence that p must be false. But both these propositions are true if q is false. Thus, if p is true, q is false; or, if Carr is out, Allen is in. The odd part of this conclusion is that it is the one which common sense would have drawn in that particular case.

The principle that the false implies the true has very important applications in political arguments. In fact, it is hard to find one principle of politics of which false propositions are not the main support.

If p and q are two propositions, and p implies q; then, if, and only if, q and p are both false or both true, we also have "q implies p." The most important applications of

[26] *Mind*, N. S., III, 1894, pp. 436-438. Cf. the discussions by W. E. Johnson, *ibid.*, p. 583, and Russell, *Pr. M.*, p. 18n, and *Mind*, N. S., XIV, 1905, pp. 400-401.

this invertibility were made by the late Mr. Samuel Butler[27] and by Mr. G. B. Shaw. A political application may be made as follows. In a country where only those with middling-sized incomes are taxed, conservative and *bourgeois* politicians would still maintain that the proposition "the rich are taxed" implies the proposition "the poor are taxed," and this implication—which is true because both protasis and apodasis are false—would be quite unnecessarily supported by many false practical arguments. It is equally true that "the poor are taxed" implies that "the rich are taxed." And this can be proved in certain cases on other grounds. For the taxation of the poor would imply, ultimately, that the poor could not afford to pay a little more for the necessities of life than, in strict justice, they ought; and this would mean the cessation of one of the chief means of production of individual wealth.

We also see why a valuable means for the discovery of truth is given by the inversion of platitudinous implications. It may happen that another platitude is the result of inversion; but it is the fate of any true remark, especially if it is easy to remember by reason of a paradoxical form, to become a platitude in course of time. There are rare cases of a platitude remaining unrepeated for so long that, by a converse process, it has become paradoxical. Such, for example, is Plato's remark that a lie is less important than an error in thought.

Of late years, a method of disguising platitudes as paradoxes has been too extensively used by Mr. G. K. Chesterton. The method is as follows. Take any proposition p which holds of an entity a; choose p so that it seems plausible that p also holds of at least two other entities b and c; call a, b, c, and any others for which p holds or seems to hold, the class A, and p the A-ness or A-ity of a, b, and c;

[27] The inhabitants of "Erewhon" punished invalids more severely than criminals. In modern times, one frequently hears the statement that crime is a disease; and if so, it is surely false that criminals ought to be punished.

let d be an entity for which p does not hold; and put d among the A's when you think that nobody is looking. Then state your paradox: "Some A's do not have A-ness." By further manipulation you can get the proposition "All A's do not have A-ness." But it is possible to make a very successful *coup* if A is the null-class, which has the advantage that manipulation is unnecessary. Thus, Mr. Chesterton, in his *Orthodoxy,* put A = the class of doubters who doubt the possibility of logic, and proved that such agnostics refuted themselves—a conclusion which seems to have pleased many clergymen.

In this way, Mr. Chesterton has been enabled readily to write many books, and to maintain, on almost every page, such theses as that simplicity is not simple, heterodoxy is not heterodox, poetry is not poetical, and so on; thereby building up the gigantic platitude that Mr. Chesterton is Chestertonian.

In the chapter on "Identity" we have illustrated the use of the principle that any true proposition implies any other true proposition. This important principle may be called *the principle of the irrelevant premise*;[28] and is of great service in oratory because it does not matter what the premise is, true or false. There is a *principle of the irrelevant conclusion,* but, except in law courts, in interruptions of meetings, and in family life, this is seldom used, partly because of the limitation involved in the logical impossibility for the conclusion to be false if the premise be true, but chiefly because the conclusion is more important than the premise, being usually a matter of prejudice.

Certain modern logicians, such as Frege, have found it necessary so to extend the meaning of implication of q by p that it holds when p is not a proposition at all. Hith-

[28] *Irrelevant* in a popular sense; one would say, speaking loosely, that the fact that Brutus killed Cæsar is irrelevant to the fact that the sea is salt; and yet this conclusion is implied both by the above premise and the premise that Cæsar killed Brutus. Cf. on such questions, Venn, *S. L.*, 2d ed., pp. 240-244.

erto, politicians, finding that either identical or false propositions are sufficient for their present needs, have made no use of this principle; but it is obvious that their stock of arguments would be vastly increased thereby.

Logical implication is often an enemy of dignity and eloquence. De Morgan[29] relates "a tradition of a Cambridge professor who was once asked in a mathematical discussion 'I suppose you will admit that the whole is greater than its part?' and who answered, 'Not I, until I see what use you are going to make of it.'" And the care displayed by cautious mathematicians like Poincaré, Schoenflies, Borel, Hobson, and Baire in abstaining from pushing their arguments to their logical conclusions is probably founded on the unconscious—but no less well-grounded—fear of appearing ridiculous if they dealt with such extreme cases as "the series of all ordinal numbers." They are, probably, as unconscious of implications as the author of the remark that Gibbon always had a copy of Horace in his pocket and often in his hand, was of the necessary implication of these propositions that Gibbon's hand was sometimes in his pocket.

DENOTING.[30]

A concept *denotes* when, if it occurs in a proposition, the proposition is not *about* the concept, but about a term connected in a certain peculiar way with the concept. Some people often assert that man is mortal, and yet we never see announced in the *Times* that Man died on a certain day at his villa residence "Camelot" at Upper Tooting; nor do we hear that Procrastination was again the butt of Mr. Plowden's jokes at Marylebone Police Court last week.

That two phrases may have different *meanings* and the same *denotation* was discovered by Alice[31] and Frege.

[29] *F. L.*, p. 264.
[30] Cf. Russell, *Pr. M.*, pp. 53-54.
[31] See Appendix J.

Alice observed that the road which led to Tweedledum's house was that which led to the house of Tweedledee; and Frege pointed out that the phrases "the house to which the road that leads to Tweedledum's house," and "the house to which the road that leads to Tweedledee's house" have different *Sinn* but the same *Bedeutung*.

NON-ENTITY.

When people say that such-and-such a thing "is non-existent," they usually mean that it is not an *it* at all, or that there is not any it.

Dr. Venn meant this when he described (in *S. L.*, 1881, p. 339n) his encounter with what he imagined to be a very ingenious tradesman: "I once had some strawberry plants furnished me which the vendor admitted would not bear many berries. But he assured me that this did not matter, since they made up in their size what they lost in their number. (He gave me, in fact, the hyperbolic formula, $xy=c^2$, to connect the number and magnitude). When summer came *no* fruit whatever appeared. I saw that it would be no use to complain, because the man would urge that the size of the non-existent berry was infinite, which I could not see my way to disprove. I had forgotten to bar zero values of either variable."

It is to be regretted that this useful note was omitted in the second edition of *S. L.*; one can imagine that it might have protected Mr. MacColl and Herr Meinong (who believed in round squares and fabulous monsters),[32] against the dishonest practices of traders who were too free in their promises. For the death-blow to this kind of free trade was not given until 1905, when Mr. Russell published his article "On Denoting," and took up the position of the White King in opposition to Alice's later assertions.[33]

[32] This belief was unlike Alice's first opinion (see Appendix K).

[33] See Appendix K.

Venn's experience illustrates another characteristic of mathematical logic. It is necessary, in order to make our arguments conclusive, to devote great care to the elimination of difficulties which rarely occur. The White Knight —who was like Boole in being a pioneer of mathematical logic in this way, and seems to have held, like Boole, those philosophical opinions which would base logic on psychology—recognized the necessity of taking precautions against any unusual appearance of mice on a horse's back.[34]

THE UNKNOWABLE.

According to Mr. S. N. Gupta,[35] the first thing that every student of Hindu logic has to learn when he is said to begin the study of inference is that "all H is S" is not always equivalent to "no H is not S." "The latter proposition is an absurdity when S is *Kebalánvayi,* i. e., covers the whole sphere of thought and existence. . . .'Knowable' and 'Nameable' are among the examples of *Kebalánvayi* terms. If you say there is a thing not-knowable, how do you know it? If you say there is a thing not-nameable, you must point that out, i. e., somehow name it. Thus you contradict yourself."

Mr. Herbert Spencer's doctrine of the Unknowable gives rise to some amusing thoughts. To state that all knowledge of such and such a thing is above a certain person's intelligence is not self-contradictory, but merely rude; to state that all konwledge of a certain thing is above all possible human intelligence is, in spite of its appearing to be a modest platitude, nonsense. For the statement shows that we do know something of it, viz., that it is unknowable.

It is somewhat amusing to find that to the last (1900) edition of *First Principles* was added a "Postscript to Part

[34] See Appendix L.

[35] *Mind,* N. S., IV, 1895, p. 168.

I,"[36] in which the justice of this simple and well-known criticism as to the contradiction involved in speaking of an "Unknowable," which had been often made during the forty odd years in which the various editions had been on the market, was grudgingly acknowledged as follows:

"It is doubtless true that saying what a thing is not, is, in some measure, saying what it is;. . . . Hence it cannot be denied that to affirm of the Ultimate Reality that it is unknowable is, in a remote way, to assert some knowledge of it, and therefore involves a contradiction."

The "Postscript" reminds one of the postscript to a certain Irishman's letter. This Irishman, missing his razors after his return from a visit to a friend, wrote to his friend, giving precise directions where to look for the missing razors; but, before posting the letter, added a postscript to the effect that he had found the razors.

One is tempted to inquire, analogously, what might be, in view of the Postscript, the point of much of Spencer's Part I. It is, to use De Morgan's description of the arguments of some who maintain that we can know nothing about infinity,[37] of the same force as that of the man who answered the question how long he had been deaf and dumb.

The analogy of the contradiction of Burali-Forti to the contradiction involved in the notion of an "unknowable" may be set forth as follows. If A should say to B: "I know things which you never by any possibility can know," he may be speaking the truth. In the same way, infinity may be said, without contradiction, to transcend all the *finite* integers. But if some one else, C, should say: "There are some things which no human being can ever know any-

[36] *First Principles*, 6th ed., 1900, pp. 107-110. The first edition was published in 1862.

[37] Note on p. 6 of his paper: "On Infinity; and on the Sign of Equality," *Trans. Camb. Phil. Soc.*, XI, Part I, pp. 1-45. (Read May 16, 1864.)

thing about," he is talking nonsense.[38] And in the same way if we succeed in imagining a number which transcends *all* numbers, we have succeeded in imagining the absurdity of a number which transcends itself.

All the paradoxes of logic (or "the theory of aggregates") are analogous[39] to the difficulty arising from a man's statement: "I am lying." In fact, if this is true, it is false, and *vice versa*. If such a statement is spread out a little, it becomes an amusing hoax or an epigram. Thus, one may present to a friend a card bearing on both sides the words: "The statement on the other side of this card is false;" while the first of the epigrams derived from this principle seems to have been written by a Greek satirist:[40]

> "Lerians are bad: not *some* bad and some *not*;
> But all. There's not a Lerian in the lot,
> Save Procles, that you could a good man call—
> And Procles is a Lerian after all."

This is the original of a well-known epigram by Porson, who remarked that all Germans are ignorant of Greek meters,

> "All, save only Hermann—
> And Hermann's a German."

MR. SPENCER, THE ATHANASIAN CREED, AND THE ARTICLES.

When, in what I believe is misleadingly known as "The Athanasian Creed," people say "The Father incomprehensible," and so on, they are not falling into the same error as Mr. Spencer, for the Latin equivalent for "incomprehensible" is merely *immensus*,[41] and Bishop Hilsey translated it more correctly as "immeasurable." It is a regrettable

[38] I think that all the talk about the finitude of man's mind is nonsense; both because, if we say that the mind of man is limited, we tacitly postulate an '*unknowable*' and because, even if the human mind were finite, there is no more reason against its conceiving the infinite than there is for a mind to be blue in order to conceive of a pair of blue eyes (Cf. De Morgan, *loc. cit.*).

[39] Russell, *R. M. M.*, Sept. 1906.

[40] *The Greek Anthology*, by Lord Neaves (Ancient Classics for English Readers). Edinburgh and London, 1897, p. 194.

[41] *A. C. P.*, p. 217.

fact that Dr. Blunt, in his mistaken modesty, has added a note[42] to this passage: "Yet it is true that a meaning not intended in the Creed has developed itself through this change of language, for the nature of God is as far beyond the grasp of the mind as it is beyond the possibility of being contained within local bounds."

Mr. Spencer seems no happier when we compare his statements with those in the Anglican Articles of Religion. There God is never referred to as infinite. It is true that his power and goodness are so referred to; but this deficiency was presumably brought about intentionally, so that faith might gain in meaning as time went on.

"GEDANKENEXPERIMENTE" AND EVOLUTIONARY ETHICS.

The "*Gedankenexperimente*," upon which so much weight has been laid by Mach[43] and Heymanns,[44] had already been investigated by the White Queen,[45] who, however, seems to have perceived that the results of such experiments are not always logically valid. The psychological founding of logic appears to be not without analogy with the surprising method of advocates of evolutionary ethics who expect to discover what *is* good by inquiring what cannibals have *thought* good. I sometimes feel inclined to apply the historical method to the multiplication table. I should get a statistical inquiry among schoolchildren, before their pristine wisdom had been biased by teachers. I should put down their answers as to what 6×9 amounts to; I should work out the average of their answers to six places of decimals, and should then decide that, at the present stage of human development, this average is the value of 6×9.

[42] *Ibid.*, p. 218.

[43] See, e. g., *E. u. I.*, pp. 183-200.

[44] *G. u. E.*, Vol. I.

[45] See Appendix M.

APPENDIXES.

A. *Logic and the Principle of Identity.*

T. L. G., p. 63: "'Contrariwise,' continued Tweedledee, 'if it was so, it might be; and if it were so, it would be: but as it isn't, it ain't. That's logic.'"[46]

S. B., p. 159: The Professor said: "The day is the same length as anything that is the same length as *it*."

S. B., p. 161: Bruno observed that when the Other Professor lost himself, he should shout. "He'd be sure to hear hisself, 'cause he couldn't be far off."

B. *Empirical Philosophers and Mathematics.*

T. L. G., p. 124: "'....Now if you had the two eyes on the same side of the nose, for instance—or the mouth at the top—that would be *some* help.'

"'It wouldn't look nice,' Alice objected. But Humpty-Dumpty only shut his eyes and said: 'Wait till you've tried.'"

T. L. G., p. 112: "'And if you take one from three hundred and sixty-five, what remains?'

"'Three hundred and sixty-four, of course.'

"Humpty-Dumpty looked doubtful. 'I'd rather see that done on paper,' he said."

C. *Nominal Definition.*

T. L. G., p. 114: "'When *I* use a word,' Humpty-Dumpty said in rather a scornful tone, 'it means just what I choose it to mean—neither more nor less.'

"'The question is,' said Alice, 'whether you *can* make words mean different things.'

[46] Unfortunately, there is some doubt here as to whether Tweedledee, like Jevons, understood *is* to mean the same as (=), or, like Schröder, to mean the relation of subsumption. The first possibility alone would justify our contention. The next extracts illustrate the importance which the Professor and Bruno ascribed to the Principle of Identity.

" 'The question is,' said Humpty-Dumpty, 'which is to be master—that's all.' "

D. *Conformity of a Paradoxical Logic with Common Sense.*

T. L. G., p. 162:

> "But I was thinking of a plan
> To dye one's whiskers green,
> And always use so large a fan
> That they could not be seen."
> (Verse from White Knight's song).

E. *Idealists and the Laws of Logic.*

T. L. G., p. 75: " '....if he [the Red King] left off dreaming about you [Alice],' [exclaimed Tweedledee], 'where do you suppose you'd be?'

" 'Where I am now, of course,' said Alice.

" 'Not you!' Tweedledee retorted contemptuously. 'You'd be nowhere. Why, you're only a sort of thing in his dream!'

" 'If that there King was to wake,' added Tweedledum, 'you'd go out—bang!—just like a candle!'

" 'I shouldn't!' Alice exclaimed indignantly. 'Besides, if *I'm* only a sort of thing in his dream, what are *you,* I should like to know?'

" 'Ditto,' said Tweedledum.... '....you know very well you're not real.'

" 'I *am* real!' said Alice, and began to cry."

T. L. G., p. 157: " 'How *can* you go on talking so quickly, head downwards?' Alice asked, as she dragged him out by the feet, and laid him in a heap on the bank.

"The Knight looked surprised at the question. 'What does it matter where my body happens to be?' he said. 'My mind goes on working all the same. In fact, the more head downwards I am, the more I keep inventing new things.' "

T. L. G., p. 159: "'. . . . Everybody that hears me sing —either it brings the *tears* into their eyes, or else—'

"'Or else what?' said Alice, for the Knight had made a sudden pause.

"'Or else it doesn't, you know.'"

F. *Distinction Between Sign and Signification.*

T. L. G., pp. 159-160: "'The name of the song is called "*Haddocks' Eyes.*"'

"'Oh, that's the name of the song, is it?' Alice said, trying to feel interested.

"'No, you don't understand,' the Knight said, looking a little vexed. 'That's what the name [160] is *called*. The name really *is* "The Aged Aged Man."'

"'Then I ought to have said "That's what the *song* is called,"' Alice corrected herself.

"'No, you oughtn't: that's another thing. The *name* is called "*Ways and Means*:" but that's only what it's *called*, you know!'

"'Well, what *is* the song, then?' said Alice, who was by this time completely bewildered.

"'I was coming to that,' the Knight said. 'The song really *is* "A-sitting on a Gate". . . .'"

G. *The Principle of Permanence.*

T. L. G., p. 172: "'Can you do Subtraction?' [asked the Red Queen], 'Take nine from eight.'

"'Nine from eight I ca'n't, you know,' Alice replied very readily: 'but—'

"'She ca'n't do Subtraction,' said the White Queen."

H. *Utility of Symbolic Logic.*

A. A. W., pp. 121-122: "'I quite agree with you,' said the Duchess; 'and the moral of that is—"Be what you would [122] seem to be"—or if you'd like it put more

simply—"Never imagine yourself not to be otherwise than what it might appear to others that what you were or might have been was not otherwise than what you had been would have appeared to them to be otherwise." '

" 'I think I should understand that better,' Alice said very politely, 'if I had it written down: but I'm afraid I ca'n't quite follow it as you say it.'

" 'That's nothing to what I could say if I chose,' the Duchess replied, in a pleased tone."

I. *Universal and Particular Propositions.*

T. L. G., p. 54: The Gnat had told Alice that the Bread-and-butter-fly lives on weak tea with cream in it; so:

" 'Supposing it couldn't find any?' she suggested.

" 'Then it would die, of course.'

" 'But that must happen very often,' Alice remarked thoughtfully.

" 'It always happens,' said the Gnat."

J. *Denoting.*

"*T. L. G.*, p. 59: Tweedledum and Tweedledee were, in many respects, indistinguishable, and Alice, walking along the road, noticed that "wherever the road divided there were sure to be two finger-posts pointing the same way, one marked 'TO TWEEDLEDUM'S HOUSE,' and the other 'TO THE HOUSE OF TWEEDLEDEE.'

" 'I do believe,' said Alice at last, 'that they live in the same house!. . . .' "

K. *Non-Entity.*

T. L. G., p. 137: " 'I always thought they [human children] were fabulous monsters!' said the Unicorn.

" 'Do you know,' [said Alice], 'I always thought Unicorns were fabulous monsters, too! I never saw one alive before!'

"[138] 'Well, now that we *have* seen each other,' said

the Unicorn, 'if you'll believe in me, I'll believe in you. Is that a bargain?' "

T. L. G., p. 127: " 'I see nobody on the road,' said Alice.

" 'I only wish *I* had such eyes,' the (White) King remarked in a fretful tone. 'To be able to see Nobody! And at that distance, too! Why, it's as much as *I* can do to see real people by this light!' "

A. A. W., p. 10: "And she [Alice] tried to fancy what the flame of a candle is like after it is blown out, for she could not remember ever having seen such a thing."

A. A. W., p. 84: ". . . .this time it [the Cheshire Cat] vanished quite slowly, beginning with the end of the tail, and ending with the grin, which remained some time after the rest of it had gone.

" 'Well! I've often seen a cat without a grin,' thought Alice; 'but a grin without a cat! It's the most curious thing I ever saw in all my life!' "

A. A. W., pp. 98-99: ". . . .the Dormouse went on. . . .; 'and they drew all manner of things—everything that begins with an M—'

" 'Why with an M?' said Alice.

" 'Why not?' said the March Hare.

"Alice was silent.

". . . .[the Dormouse] went on: '—that begins with an M, such as mouse-trap, and the moon, and memory, and muchness, you know you say things are "much of muchness"..did you ever see such a thing as a drawing of a muchness?'[47]

[99] " 'Really, now you ask me,' said Alice very much confused, 'I don't think—'

" 'Then you shouldn't talk,' said the Hatter."

[47] This extract also illustrates the chapter on "Denoting."

L. *Objects of Mathematical Logic.*

T. L. G., p. 149: "'I was wondering what the mouse-trap [fastened to the White Knight's saddle] was for,' said Alice. 'It isn't very likely there would be any mice on the horse's back.'

"'Not very likely, perhaps, said the Knight, 'but, if they *do* come, I don't choose to have them running all about.'

"'You see,' he went on after a pause, 'it's as well to be provided for *everything*. That's the reason the horse has anklets round his feet.'

"'But what are they for?' Alice asked in a tone of great curiosity.

"'To guard against the bites of sharks,' the Knight replied."

M. *Gedankenexperimente.*

T. L. G., p. 92: "Alice laughed. 'There's no use trying,' she said: 'one *ca'n't* believe impossible things.'

"'I daresay you haven't had much practice,' said the [White] Queen. 'When I was your age, I always did it for half-an-hour a day. Why, sometimes I've believed as many as six impossible things before breakfast.'"

A. A. W., p. 11: "She [Alice] generally gave herself very good advice (though she very seldom followed it), and sometimes she scolded herself so severely as to bring tears into her eyes; and once she remembered trying to box her own ears for having cheated herself in a game of croquet she was playing against herself, for this curious child was very fond of pretending to be two people."

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CONTRIBUTIONS OF BUDDHISM TO CHRISTIANITY.[1]

WE are now aware that most dissimilar forces have combined in the origin of Christianity and of the Gospel narratives of the life of Jesus: of foreign civilizations, especially the Hellenistic, Persian and Babylonian. But I dare assert almost with certainty that Buddhism has not furnished any contribution, as I shall endeavor to show in the first part of this paper.

For this purpose I shall have to emphasize a point of view which to my knowledge has hitherto received no consideration. This is the essential difference between the *alleged* Buddhist elements in the canonical Gospels and the *actual* Buddhist elements in the Apocryphal Gospels. The narratives of the canonical Gospels which accord with Buddhist stories do not at all bear a specifically Buddhistic or even a specifically Indian character; their origin is entirely comprehensible without the hypothesis of an Indian derivation. On the other hand the stories of the Apocryphal Gospels, parallels to which exist in Buddhist literature, show genuine features of India's romantic lore. Why is this not true of the New Testament? This important difference seems to me to be of paramount significance in clearing up the matter. Here at the very beginning of

[1] Authorized translation from the German by Lydia G. Robinson.

my exposition I have thus stated what may be expected from it, because I wished to forestall the assumption that this essay belongs to the numerous attempts to "Buddhize" the New Testament.

The similarities between the stories of Buddhism and those of the New Testament have formed an arena where dilettantism has long had a flourishing existence. There every resemblance is explained as a loan without pausing to ask when the Buddhist texts which had been called into service were written, whether the loan is at all possible historically, whether the details of the parallels are of such a kind as to justify the idea of an external connection, and whether the conditions in India and Palestine were not so similar that some ideas and stories would naturally show a certain similarity in spite of an independent origin.

Further, the problem is frequently treated as if its solution affected the value of Christianity and Buddhism. In this point of view freedom from prejudice—an essential condition of all scientific work—is impossible, and in its place there enters the tendency to prove according to the author's religious position either that Christianity is free from Buddhist influences or else that it is under the influence of Buddhism, whereas in reality the details under discussion are entirely without importance for the *essential character* of either religion. Neither Christianity nor Buddhism has anything to win or to lose from the answer to the question with regard to their connection. The whole matter has no religious nor ethical significance but is of value only for the history of literature.

Under these circumstances a word should be spoken first of all with regard to the literature really deserving attention in any consideration of the subject. In spite of the overproduction in this domain only a few volumes and treatises are of importance.

To Rudolf Seydel is due the credit of having turned the

treatment of the theme into scientific channels. In his two books, "The Gospel of Jesus in Its Relation to Buddha-legend and Buddha-lore"[2] and "Buddha-legends and the Life of Jesus According to the Gospels,"[3] Seydel believes he has been able to establish the influence of Buddhism, and indeed of Buddhist literary sources, on the Gospels, and for this view he has won as much enthusiastic applause as he has received decided opposition. That he undertook to prove more than is capable of proof is not denied to-day even by the supporters of the loan hypothesis.

Of the literature which followed upon his books, the "Indian Influence on Gospel Narratives"[4] of G. A. van den Bergh van Eysinga and Albert J. Edmunds's *Buddhist and Christian Gospels*[5] deserve unlimited recognition because of their scientific method. Both of these works, and especially the second, represent a sort of retreat from Seydel's standpoint; but both advocate the dependence of the Gospels on Buddhist models although Edmunds regards the loan question as a secondary consideration. It is a special merit of Eysinga's work that it rejects Seydel's groundless hypothesis of a Buddhistically colored Christian Gospel which the authors of the canonical Gospels are supposed to have used together with their other sources; also that it does not seek to render probable any dependence of Gospel narratives on Buddhistic *writings*, but only on Buddhistic materials which have been handed down by *oral* tradition. One year before the appearance of the first German edition of Eysinga's work a similar standpoint was taken by Otto Pfleiderer in his work on "The Christ

[2] *Das Evangelium von Jesu in seinen Verhältnissen zu Buddha-Sage und Buddha-Lehre*, Leipsic, 1882.

[3] *Die Buddha-Legende und das Leben Jesu nach den Evangelien*, Leipsic, 1884; 2d ed., Weimar, 1897.

[4] *Indische Einflüsse auf evangelische Erzählungen*, 2d ed., Göttingen, 1909.

[5] *Buddhist and Christian Gospels Now First Compared from the Originals.* Edited with English notes on Chinese versions dating from the early Christian centuries by Prof. Masaharu Anesaki, 4th ed., 2 vols., Philadelphia, 1908, 1909.

of Primitive Christian Faith in the Light of the History of Religions."[6]

Of those works which support the opposite point of view we would mention as especially valuable and thoughtful the treatise of Louis de la Vallée Poussin on "Buddhism and the Canonical Gospels with Reference to a Recent Publication,"[7] (the third edition of the above-mentioned book of Edmunds); the twelfth chapter on "Comparative Science" of Ernst Windisch's "Birth of Buddha and the Doctrine of the Transmigration of Souls";[8] and Otto Wecker's "Christ and Buddha."[9]

Especially noteworthy also is an article, "Christ in India," published by the American Sanskritist E. Washburn Hopkins, the successor of W. D. Whitney to the chair of Sanskrit at Yale, in his book *India Old and New.*[10] This article may be divided into two parts of unequal value. In the first, the contents of which are quite unexpected from the title of the treatise, Hopkins investigates the parallels between Christianity and Buddhism in such a careful and plausible way that in the main I can endorse his expositions. The case is different with the second part which discusses the relations between Christianity and Krishnaism, for this seems to me to require thorough testing. In this domain I have arrived at conclusions essentially different from those of Professor Hopkins. Especially do I place at a later date than he the Christian influence in Krishnaism and other Indian religions.

In his clear expositions Windisch reaches a result to which every calm and impartial judge of these matters

[6] *Das Christusbild des urchristlichen Glaubens in religionsgeschichtlicher Beleuchtung*, Berlin, 1903.

[7] "Le Bouddhisme et les Evangiles Canoniques à propos d'une publication récente" in the *Revue biblique* of July, 1906.

[8] *Buddha's Geburt und die Lehre von der Seelenwanderung*, Leipsic, 1908, pp. 195-222.

[9] *Christus und Buddha*, 3d ed., Münster, 1910.

[10] New York and London, 1901.

can subscribe: "We should not let the parallels between Buddhism and Christianity escape us, but the word 'parallels' must be understood in its proper sense as lines which do not touch nor intersect." And with reference to the ideas and narratives akin to Buddhism which occur in the writings of the New Testament in spite of the fundamental contrast between Christianity and Buddhism, he says: "What has taken place may perhaps be thus formulated, that ideas and materials having their origin in the philosophical views of the time and in other religions, and having come into circulation, have been made serviceable to Christian ideas."[11]

This is the utmost that can be conceded to the advocates of Buddhist influence. In reality no influence of Buddhist tales or Buddhist doctrine upon the New Testament scriptures has as yet been proved.[12] To make this clear I shall briefly enter into those parallels which, mainly on account of the age of the corresponding Buddhist stories, have generally been considered the most convincing from the point of view of the advocates of Buddhist originality and Christian dependence.

1. In John ix. 1-3, we read: "And as Jesus passed by, he saw a man which was blind from his birth. And his disciples asked him, saying, Master, who did sin, this man, or his parents, that he was born blind? Jesus answered, Neither hath this man sinned, nor his parents, etc."

This incident has been compared to the Buddhistic (and Brahmanistic) doctrine of transmigration and the power of deeds to demand retribution. Hopkins gives

[11] See also Hopkins, pp. 136, 143, 144, 168. The cautious A. J. Edmunds makes a similar statement in *The Open Court*, May 1911, p.262: "My general attitude toward the Buddhist-Christian problem is this: Each religion is independent in the main, but the younger one arose in such a hot-bed of eclecticism that it probably borrowed a few legends and ideas from the older, which was quite accessible to it."

[12] This is likewise admitted by Eysinga in the words (p. 104): "We must grant from the very beginning that it is hard to furnish an absolute proof for these points."

expression to a correct fundamental idea when he observes, "If Christ had been under Buddhistic influence he would surely have said, This man only." More correctly the statement should read: If the author of the Fourth Gospel had been under Buddhist influence, he might have put in the mouth of Christ only the answer, "This man."

From the earliest times until the present it is the general opinion in India that blindness is the consequence of having blinded some one else in a previous life. Without the conception of an after effect of some such crime in a former existence, the question the disciples put to Christ in the Gospel of John would be quite unintelligible. In spite of this, Hopkins with good reason denies the influence of a Buddhist source on the Biblical narrative because there is no corresponding story in the life of Buddha.

In the "Lotus of the Good Law," a Buddhist work which cannot be placed before 200 A. D., there is a similar parable of a physician who heals a blind man and accounts for the blindness in the usual way as the punishment for previous sins. With regard to the story in John, Professor Hopkins observes (p. 127):

"The only parallel in the Gospel account is one of thought, for it is claimed that such an idea as is here presented in the disciples' question implies a doctrine that is specially Buddhistic (namely, sin working out in disease in a new birth), because it is foreign to Jewish ways of thinking. But the latter point may be admitted without any necessity of accepting the explanation, since an Egyptian source is quite as probable as a loan from India." Later on he adds (p. 136): "It is possible that the idea of *karma* [the law of retribution for sins committed in a former existence] may have been received from India."

I am surprised that Hopkins here pays no attention to the second part of the question of the disciples, namely, whether the sins of the parents were to blame that the

man was born blind; for this question is based on the formidable statement of the Old Testament which has found its confirmation in the modern knowledge of the burden of heredity and does credit to the Hebrew sense of reality: "I the Lord thy God am a jealous God, visiting the iniquity of the fathers upon the children unto the third and fourth generation." The second part of the disciples' question, which accordingly is rooted in a typically Jewish conception, ought to point the way to a correct interpretation of the first part, for it is *a priori* improbable that these two divisions should originate in the thought-cycles of different nations. Moreover a scientific method will always endeavor to derive and to understand the religious, and likewise the philosophical, ideas of a people from the conceptions of its own nationality, and not until it fails to find there any satisfactory point of contact will it consider the possibility of a loan from foreign lands.

In the present case, in order to establish the assumptions for the first part of the question as to whether the blind condition in which the man was born had its cause in a sin of his own, and was therefore committed in a previous existence, it is not necessary to go so far away as India. Nor shall we need to look for it in the Egyptian religion, which Hopkins considers just as possible as a loan from India; especially as the popular Egyptian notion of the transformability of the human soul after death does not furnish adequate grounds. Rather must we first prove whether we shall have to agree with Hopkins that the notion of the pre-existence or transmigration of the soul was an idea foreign to Jewish thought at that time. This is not at all the case, for the idea of transmigration was by no means unknown to Judeo-Alexandrian philosophy. Philo, whose doctrines are recognized as forming one basis of the Fourth Gospel, possesses the doctrine of transmigration in common with the Pythagoreans and Or-

phici, from whom he received it. Zeller writes on this subject in his "Grecian Philosophy,":[13] "Not until they are separated from the body do those souls that have kept themselves free from dependence upon it attain again to unalloyed enjoyment of their higher life;. . . .to others, on the rare occasions in which he speaks of the subject, Philo holds out the prospect of transmigration demanded by his assumptions." The accompanying note gives a series of illustrative citations. Eysinga and O. Wecker refer also to the Wisdom of Solomon (viii. 19, 20) where about 100 B. C. the words, "Being good, I came into a body undefiled," are put in the mouth of Solomon, and in this utterance they find evidence for a belief among the Alexandrian Jews in the pre-existence of the soul. Hence we have not the slightest reason to assume Buddhist influence for the Fourth Gospel's story of the man born blind; and we can easily understand how Otto Pfleiderer, who at first saw in this story one of the best foundations for Seydel's hypothesis, could afterwards withdraw entirely from this position.

2. When the advocates of Buddhist influence lay special stress on the legends of Buddha's supernatural birth (which were in existence three or four centuries before Christ) this argument is untenable for two reasons. In the first place because of the enormous difference between the Buddhist and Christian birth legends. Ancient pre-Christian Buddhism knows nothing of the virginity of the mother of Buddha; on the contrary the earlier texts expressly say that she was not a virgin[14] when the Bodhisattva (the future Buddha) entered her womb in the form of a white elephant, later to emerge into the light of day from her right side. The second reason against the dependence of

[13] *Philosophie der Griechen*, 4th ed., III, 2, p. 446. See also on p. 451: "Because he derived even the union of soul and body from a voluntary act, etc."

[14] Hopkins, page 129.

Christian upon Buddhist legends lies in the well-known fact that many of the religious founders and teachers in the Orient—and often enough also outside of the Orient (Plato!)—are claimed to have been born in a supernatural manner. Some of these stories, as for instance the Parsi prophecy of the birth of the future saviour, are much more easily comparable to the story of the birth of Christ than are the Indian legends of the supernatural birth of Buddha.

3. The last parallel to be taken into consideration is the temptation story reported of both Buddha and Christ, and indeed in both cases occurring in connection with a fast. There is only one Buddhist temptation story referring to the time when Buddha had attained the redeeming enlightenment, which need be considered for purposes of comparison; but we must mention that Buddhist literature is remarkably rich in analogous tales in which Buddha is tempted or annoyed by Satan now in one manner, and now in another. Christ fasts 40 days *before* the temptation, Buddha 28 days *after* the temptation. Now in India fasting is just as common a custom as in Palestine, so that this correspondence which is not even perfectly exact but qualified by two differences does not testify in favor of the loan. And in details the temptation stories themselves differ just as conspicuously from one another as do the stories of the supernatural birth of the two religious teachers.

The reports of the temptation of Christ are well known (Matt. iv. 1 ff.; Luke iv. 2 ff.). The devil demands of Christ to change stones into bread, to throw himself down from the pinnacle of the temple and to worship him, the devil, in order to receive in return as a reward the kingdoms of the world and their glory. In the Buddhist legends the tempter endeavors in vain to corrupt Buddha by stimulation of the pleasures of sense; then he attacks him,

equally in vain, with a frightful storm, and finally with his hellish hosts. Even this form of the story does not appear until in the later writings. The oldest source knows only of an attempt of Satan to induce Buddha to enter into Nirvana immediately after the attainment of enlightenment without declaring to mankind the way of salvation and redeeming them from the power of darkness. In his *Buddha*[15] Oldenberg remarks in a note: "It seems scarcely necessary to observe that in both cases the same obvious motives have given rise to the corresponding narratives; the notion of an influence exerted by Buddhist tradition on Christian can not be entertained." This is perfectly true. In every religion, containing both a saviour of the world and a Satan, a story of the temptation of the former by the latter will be invented. The author of a biographical devotional work would not let the opportunity for such an effective scene escape him. Only complete identity of situation or of single features, which would be comprehensible only on the one and not on the other side from the connection, could make the idea of a loan seem natural. Accordingly if in this case the difference between the accounts in the Buddhist source and in the New Testament is too great for a loan to be considered, then here too there enters the same further reason as in the case of the birth stories, against the assumption of dependence of the Christian narrative upon the Buddhist. In the story of the temptation also the more similar account of the Zarathustra legend would offer a far better subject of comparison than the Buddhist tales.

Although those investigators who wish to make the New Testament appear dependent upon Buddhism draw into the foreground other parallels, and one declares this

[15] Fourth German edition, pages 135-136; English translation by William Hoey, pages 115-116. Compare with this the lucid expositions of Ernst Windisch in his work *Mara und Buddha* (Leipsic, 1895) especially in Chap. IX on "The Christian Temptation Story."

and another that to be of particular value, still the three parallels herein discussed have on the whole aroused the most general attention. Nevertheless even these prove nothing for the dependence of the Gospels upon Buddhism, and the greater part of the material adduced as pointing in this direction is of less weight.

To these minor stories belong the incident of Simeon in the temple (Luke ii. 25 ff.) to which Buddhist literature offers a parallel in the story of the venerable saint Asita, who hastens to the new-born child Buddha, takes him on his arm and declares him to be the noblest and most exalted of mankind; the stories of the twelve-year-old Jesus found in the temple (Luke ii. 41 ff.) and of the child Buddha gone astray in a country outing and found again sunk in meditation under a tree which casts miraculous shadows round about although the sun is about to set; calling the mother of Jesus blessed by a woman of the populace (Luke xi. 27) and the calling of the parents and wife of Buddha blessed by a noble maiden; the mites of the poor widow who in a Buddhist story also offers two copper pieces in a collection taken by the priests, whereupon the high priest praises this gift as more acceptable than the treasures brought by the wealthy; the Samaritan woman and the Chandāla girl by the spring; the calling of the disciples related as taking place on the first public appearance in the case of both Jesus and Buddha; the transfiguration of Jesus and Buddha, and some more.

All these briefly suggested analogies on closer inspection partly prove not to be analogies at all and partly may be interpreted very satisfactorily from the similarity of religious disposition or of external circumstances. Hence we find that if these parallels—and here I disregard the three above discussed—were to be looked upon as derived by loan, then according to the age of the Buddhist sources in which they occur, Buddhism must have been the borrower

in almost every case.[16] Of the four theses in which R. Seydel has condensed the result of his comparison of the material which he collected, the second reads: "Borrowing upon the Buddhist side is impossible from chronological reasons and with reference to the history of Buddhism." Exactly the opposite proves to be the case. For instance the story of the prodigal son does not occur in Buddhist literature until 200 A. D. in the "Lotus of the Good Law" and most of the other parallels, as even Seydel admits, are to be found in the Lalitavistara, a northern Buddhistic biography of Buddha dating at the earliest in its present form from the second or third century after Christ. And the story of the widow's mites, without question one of the most remarkable parallels, we have only in a Chinese version of Ashvaghosha's *Buddhacarita*. The original dates back to the first century of the Christian era, but the Chinese translation not until the end of the fourth century or the beginning of the fifth.[17] If the obvious objection is raised that it is possible for these Buddhist tales to be much older than the literary garb in which we now have them then this of course can be granted. But whoever makes this possibility the basis of argument without attempting a proof loses all firm ground from beneath his feet.

As to the previously mentioned parallel between the stories of Asita and Simeon, it is certain that the Indian tale would be the original, if it is necessary to assume a loan on one side to the other.[18] Besides this, two of the best known of the miracles of the New Testament, parallels

[16] This is also the case with an Old Testament narrative which certainly did not originate independently a second time, namely the incident of the judgment of Solomon (1 Kings iii. 16-28) which reappears not only in the Tibetan Kandjur, as was previously thought, but also, as we now know, in a Jātaka. The antiquity of the Jewish story removes all doubt that it is the original and the Buddhist version is borrowed.

[17] Beal, *Abstract of Four Lectures on Buddhist Literature in China*, London, 1882, pp. 98, 99.

[18] R. Pischel, *Leben und Lehre des Buddha*, 17, 18; H. Oldenberg in *Deutsche Rundschau*, Jan. 1910, No. 4, Note 30.

to which Max Müller[19] pointed out in two Jātakas (tales of the previous existence of Buddha), are open to the suspicion of Indian origin. These parallels deal with the miracle by which Buddha satisfied the hunger of more than five hundred people with one loaf of bread; and with the story of the disciple who walked upon the water in a state of ecstasy, then began to sink when he awoke, but by his power of concentration was finally brought successfully to the other shore. Although the age of the Buddhist sources is uncertain in both of these cases also, nevertheless parallels from the Jātakas are always of greater weight than from the Lotus and the Lalitavistara.

An Indian origin for the story of Christ and Peter walking on the water (Matt. xiv. 25 ff.) could be based on the additional strength that its agreement with the Indian story receives from the feature that Peter begins to sink because of his little faith, as does Buddha's disciple in consequence of the terror which overcomes the ecstasy when, half-way across the river, he observes the waves. The idea that extraordinary men have possessed the power to walk or ride in a wheeled vehicle on the water does not belong so much to the India of Buddhism as to that of Brahmanism. In the Mahābhārata (VII, 2267, 8) the same thing is told of the pious and virtuous king Dilipa and Prithu Vainya (VII, 2402).[20] Hence this fantastic feature seems to be genuinely Indian, which of course does not exclude the possibility that it may have originated independently elsewhere.

Although in the three cases just mentioned I have been the first to be able to decide to believe in the Indian derivation of the New Testament stories, I cannot do so in the following, although at first glance the similarities are very striking.

[19] "Coincidences" in *Last Essays*, 284 ff.

[20] E. W. Hopkins in *Proceedings of the American Philosophical Society*, Vol. XLIX, No. 194, 1910, p. 38.

Beal[21] has called attention to the agreement between the description in 2 Peter iii. 6, 7, 10, 12, 13, according to which the world was once destroyed by water and would be annihilated by fire in the future in order to arise again new and better, with the Buddhist account of the periodic destruction of the world by water, fire and wind. But this agreement is only external and apparent; for the Epistle of Peter refers to the Old Testament legend of the deluge, and the belief in the future destruction of the world by fire is the result of the expectation of the Judgment in which the fire that is to receive the condemned plays a decisive part. Moreover here again the analogous presentation of Parseeism offers a closer parallel. That the Parsee thought-cycle actually has exerted an influence in this case is rendered very probable by the expectation of a new world mentioned in verse 13.

Albert J. Edmunds has repeatedly[22] laid great stress on John vii. 38 and xii. 34 where quotations from the scripture (γραφή) and the "law" (νόμος) are adduced that cannot be pointed out in Hebrew literature but can be, as he thinks, in the Buddhistic Pali canon. Although various distinguished scholars have become convinced that this point is established (Eysinga only in the first instance, not in the second), yet I cannot agree with them; for in these two cases also the discrepancies seem to me to be too great for me to be able to believe in a connection.

In John vii. 38 where it reads: "He that believeth on me, as the scripture hath said, out of his belly shall flow rivers of living water," we have here a figurative expression used by many races for the stimulating and vivifying influence which proceeds from the believer. This is entirely different from the great miracle of the Tathāgata (Buddha) which cannot be imitated by his followers,

[21] *Romantic Legend of Sakya Buddha.* London, 1875, Introd. x, Note 1.

[22] *Buddhist Texts in John,* Philadelphia-London, 1906; and "Buddhist Texts Quoted in the Fourth Gospel," *Open Court,* 1911, 257 ff.

namely that he has the power to have fire and water stream out from his body (Patisambhidāmagga I, 53).

For the second passage (John xii. 34): "The people answered him, We have heard out of the law that Christ abideth forever," the alleged source discovered by Edmunds in the Mahāparinibbānasutta (Dighanikāya 16, translated by Rhys Davids in *Sacred Books of the East*, XI, 40) reads as follows: "Anando, any one who has practised the four principles of psychical power, developed them, made them active and practical, pursued them, accumulated and striven to the height thereof — can, if he so should wish, remain (on earth) for the aeon or the rest of the aeon. Now, Anando, the Tathāgato has practised and perfected these; and if he so should wish, the Tathāgato could remain (on earth) for the aeon or the rest of the aeon." This parallel in my judgment loses all significance through the conditional clause that the Tathāgato could remain on earth to the end of the present aeon (*Kappa*) *if he so should wish*—which luckily for him he has exactly not wished.

That the citations in the two passages of the Gospel of John cannot be verified in Hebrew literature does not seem to be so serious to me as to the learned counsel in defence of the Buddhist origin; for either the two passages may not have been quoted literally or the Hebrew source may have been lost.

Finally there is one more very important preliminary question, bearing upon the loan hypothesis, which must be duly considered. Do the evidences of intercommunication at all permit the assumption that as early as the first century after Christ, or earlier, Buddhist legends and ideas had found their way into Palestine? The reports here to be taken into account are but scanty.[23] They admit, to be

[23] Compare among others the notices in Wecker (3d ed., p. 33 ff.) and the literature given in his note on page 33; also Edmunds's introductory chapter

sure, the *possibility* of the assumption that Buddhist influences might have penetrated to Palestine by way of Alexandria and still more probably by way of Antioch in Syria—these are the routes which Eysinga makes the historical foundation of his hypothesis—but they are not apt to raise this possibility *to a serviceable degree of probability for as early a period as the first post-Christian century.*

For those who, like Eysinga, rest upon the Loman-Van Manen standpoint that the whole New Testament originated in the second century, this deliberation has little significance. But this standpoint does not have the support of a single serious theologian in Germany, and it is untenable for the reason that it is founded on the hypothesis that the whole collection of Pauline epistles is not genuine. We may safely follow so prudent and sensible a leader as Adolf Jülicher who carefully weighs all circumstances. With the exception of the pastoral letters (Timothy and Titus) which are practically not to be considered at all for our purpose, and the so-called Catholic epistles (1 and 2 Peter, James, Jude, 1, 2, and 3 John) which belong to the second century, Jülicher brings only three of the New Testament writings down to the beginning of the second century, placing the Acts at 105 A. D.,[24] the Gospel of Luke somewhere between 80-110,[25] and the Gospel of John in the same time as his letters, namely between 100 and 125.[26]

In the second century after Christ the circumstances mentioned above are slowly altering. With the increase

"The Possibility of Connection Between Christianity and Buddhism" (Vol. I, 4th ed., pp. 111 ff.).

[24] *Einleitung in das neue Testament*, 5th and 6th editions, pp. 395-397.

[25] *Ibid.*, 295-296; still he goes beyond the year 100 with hesitancy, and his results sound different from the words of Pischel (*Leben und Lehre des Buddha*, 19) who in order to render probable the Indian origin of the story of Simeon says: "The Gospel of Luke is assigned by the critics to the second century A. D." But when Pischel directly before this remarks, "Still it is not an accident that all contact of this kind between Christianity and Buddhism is to be found in Luke," a glance at the parallels above discussed will show that this is not correct.

[26] *Ibid.*, 212, 218, 359.

of communication, to which historical reports bear witness, Indian thoughts and materials actually press towards the west and find entrance in Christian literature. Here belongs the loan of the fish-symbol from northern Buddhism for which Pischel in his essay on "The Origin of the Christian Fish-Symbol"[27] thinks he had found the historical foundation in the mingling of religions now brought to light in Turkestan. A loan by this route may be questioned, for the combination of the elements of Christian, Zarathustrian, Buddhist and Chinese religions before the third century is not attested by the remarkable discoveries in Turkestan, while the Christian fish-symbol is assigned by Tertullian to the end of the second century.

The probability is that the transference of the Buddhist fish-symbol into the Christian world has traveled ahead on the same path which further on will be shown for the reception of Buddhist narratives in Christian legend, that is to say by Bactria, Persia and Syria. As to the fact of the loan itself I no longer question it. I confess that I did so for a long time, beacuse I thought with Oldenberg (*ZDMG.* 59, 625 ff.) that the origin of the Christian fish-symbol could be explained more simply and with entire adequacy by the familiar acrostic[28] without the aid of foreign influences. The objections which Eysinga has raised[29] have convinced me that the ichthus can not have originated from that acrostic. When Eysinga demonstrates that the close sequence of these five words was not at all customary in the usage of the language and in fact cannot be found in antiquity; that the combination of these letters into an acrostic did not resemble the particular size of the initial letters in inscriptions, nothing was left to me but the assumption that the reference of the *ichthus* to Christ is not

[27] *Der Ursprung des christlichen Fischsymbols* (Sitzungsberichte der Berliner Akademie, 1905).

[28] *ἰχθύς* = *Ἰησοῦς χριστὸς θεοῦ υἱὸς σωτήρ.*

[29] *ZDMG*, 60, 210-212.

original, but that the word first became serviceable to the Christians by the coincidence of the letters and then lost its foreign aspect.

Particularly convincing to me is the appearance of the vase of Piprāva found in Buddha's grave (hence dating from the year 477 B. C.) with its handle in the form of a fish.[30] A comparison of this ancient representation of the Buddhist symbol with the numerous Christian fish pictures in the catacombs will probably act upon others also with the directness in which sense-perception always excels reflection. It seems to me now to be just as impossible for the far-fetched fish-symbol to have been made a symbol of the Saviour in Christianity independently of Buddhism.

In India the literary evidence of this symbol, as is well known, leads us back as far as the Brāhmana literature. Manu, the father of mankind, is saved from the great flood by the supernatural fish (Satapatha Br. 1. 8. 1, 1-10) which later interpretation recognizes as the god Vishnu. But the actual beginnings of the fish-symbol reach back still more remotely in the ancient Semitic Orient, whence it penetrated into India, to the Babylonian fish divinities and the legend of the pious Par-napishtim whom the fish-god Ea rescues from the deluge. Yes we may go even farther and say that the origin of the symbol itself may be followed back to the primitive condition of mankind in those times when man still saw in many of the animals that surpassed him in strength and ability, beings of a higher order which he therefore deified. The fish belongs to the oldest totem animals and because of its ability to swim and to live under the water it aroused the admiration of mankind still in the state of savagery.[31]

[30] See the illustration in Pischel's *Leben und Lehre des Buddha*, 45, and "Buddhist Relics" in *The Open Court*, Jan. 1910, p. 33.

[31] Compare the useful compilations of Paul Carus in his article "Animal Symbolism," *The Open Court*, February 1911, p. 79.

The Indian fish-symbol which reached Christianity through the mingling of pagan cults among the people of the Mediterranean has led me away from my proper theme to an excursion into remotest antiquity. We shall now return to the second century when Buddhist elements begin to penetrate into the Christian world.

What was improbable with regard to the canonical Gospels on historical considerations, and on closer investigation of details proved unfounded, does not hold true with the Apocryphal Gospels. With this remark I come back to what I said at the beginning of this essay.

The Apocryphal books of the New Testament are mainly spurious Gospels and stories of the apostles belonging mostly to the third, fourth and fifth centuries, some however being older like the Proto-Gospel of James which dates back to the end of the second century. In fantastic style and with a preference for adventurous miracles these Apocryphal Gospels treat mainly of the childhood but also of the passion and resurrection of Jesus.

The parallels with Buddhist tales in the Apocrypha are of an entirely fabulous character, and are entirely different from those claimed to exist in the canonical Gospels. Here we have to do with genuine Indian miracle tales—not miracles of situation for purposes of edification but quite unheard-of miracles the invention of which had for its sole purpose to arouse the astonishment of the hearer or reader.

Since there is no law to decide here between a loan and an independent invention, the final word about the main point must be left to scientific discernment. Whoever possesses a direct insight for what is right, which often is more important for the advancement of scientific knowledge than scholarship or industry, will not doubt for an instant that the stories herein to be adduced from the Apocryphal Gospels have been transferred from Bud-

dhist legends in which they likewise appear. For me the strongest proof that the Buddhist influence first entered into Christianity in the Apocrypha is exactly the fundamental difference between *these* parallels and those of the canonical Gospels.

Credit is due Ernst Kuhn for having first pointed out loans from Buddhism in the Apocryphal Gospels in the Gurupūjākaumudi.[32]

In the Lalitavistara there are two stories which on account of philological reasons may be counted among the older component parts of the work. They relate how the Bodhisattva (the future Buddha) "was once brought in festive procession to the temple of the gods and at his entrance the lifeless images of the gods stood up from their thrones in order to throw themselves at the feet of the Bodhisattva; further how, when brought to school, he astonished his teacher by the most exact knowledge of the sixty-four kinds of script and during the recitation of the alphabet wise sayings were heard, to the great edification of the whole school" (page 116). We meet with the first of these two stories in the Gospel of Pseudo-Matthew, and with the second in the Gospel of Thomas in such striking agreement that their Buddhist origin stares us in the face. Particularly convincing as a genuine Indian idea in this second story is the mystical meaning of letters which the Christ-child explains to his teacher. Nor can it be a chance correspondence that both in the narrative of the Lalitavistara and in the Gospel of Thomas the teacher falls unconscious to the ground at the appearance in the school of the miraculous child.

The adoption of these two stories in the collection of Christian legends in the period between the end of the second and the middle of the fourth centuries is attested

[32] Presented at the 50th anniversary of Albrecht Weber's Doctorate Jubilee, Leipsic, 1896, pp. 116-119.

by Irenaeus, Eusebius and Athanasius. These fortunate observations of Ernst Kuhn must arouse the expectation that a more exact investigation of Apocryphal Gospels and stories of the apostles would bring to light many other Buddhistic elements. Eysinga has fulfilled this expectation even though perhaps still more material may eventually be found. This scholar has revealed the following connections which can not be reasoned away by the assumption of accidental correspondence.

In the Lalitavistara we read that while still in his mother's womb the future Buddha emitted a marvelous light, and the Brahman sources relate the same of Krishna. Since the Gospel of Pseudo-Matthew relates the same phenomenon of the birth of Jesus, at the same time adding *"nulla pollutio sanguinis facta est in nascente, nullus dolor in parturiente,"* which in Buddhist sources (the Digha- and Majjhima-Nikāya) is likewise related of the birth of the Bodhisattva, the Buddhist origin of these accounts is perfectly evident. The declaration in the last-named source that the Bodhisattva could stand as soon as he was born and took seven steps towards the north, Eysinga has well associated with the story in the Proto-Gospel of James that the Virgin Mary when six months old took seven steps towards her mother as soon as she had been placed upon the ground. For the further establishment of the Indian derivation of this story I might add that the concept of the "seven steps" has been well established in India since antiquity. In Vedic times the seven steps of the young pair belonged to the universally prevalent marriage customs.[33]

Far more remarkable however is the following parallel: According to the Lalitavistara all motion in the world of nature and humanity stands still before the birth of

[33] J. Jolly, "Recht und Sitte" in *Grundriss der indo-arischen Philologie und Altertumskunde*, II, 8, p. 54.

the Bodhisattva. The partly opened flowers cease to bloom; the winds stop blowing; the rivers and brooks no longer flow; sun, moon and stars stand still; all human activity is paralyzed. According to the Proto-Gospel of James, Joseph notices the same miracles before the birth of Jesus. He looks into the heavens and sees how everything in the atmosphere and the sky has suddenly come to a stand. The rest of the report which I here quote in the words of Eysinga is apparently a more detailed rendering of the shorter description of the wonderful stoppage of events in the Lalitavistara: "Joseph himself walked around and yet didn't walk around. He saw that laborers sat around a platter; those who were chewing did not chew, those who were helping themselves did not help themselves; some who were putting food to their mouth put nothing in their mouth but all looked upward. Sheep driven ahead stood still, the shepherd wished to strike them with his staff but his raised hand remained uplifted. The goats stretched their mouths to the water but drank not. Everything in its course stood still."

In Buddhist literature we have also several parallels to the story in the Gospel of Pseudo-Matthew that at the command of the Christ-child a palm-tree bowed its branches to the earth and offered its fruit, which otherwise was out of reach, to the travel-worn and thirsty Mary. Among these parallels we will consider especially by way of comparison the story of the trees which bent their branches to the help of Māyā the mother of Buddha when her confinement took her by surprise in the open air. The motive of this and similar miraculous accounts is genuinely Indian. However, when Eysinga reaches back to the Veda and wishes to include among the Indian stories of trees which bend their branches the passage in the Rigveda where the woods are said to bow from fright before the attack of the Maruts, the companions of Indra,

and the earth and mountains to tremble, this is not correct. In this case we have simply to do with a description of natural phenomena produced by the thunderstorm personified by the Maruts. Entirely different is the fabulous Buddhistic motive of the trees bowing under magical compulsion or from compassion.

In the domain of apocryphal stories of apostles belongs in this connection the account of the missionary activity of St. Thomas. In the Acts of St. Thomas the Apostle, the substance of which dates from the first half of the third century, it is related that Christ sold Thomas as a slave into India in order that he might build a palace for King Gundaphorus who had sent to Jerusalem for a skilled architect. When Thomas spent the money that had been given him for its construction for benevolences among the poor and was to be punished by death by the enraged king he was saved by the declaration that he had built a palace in heaven for the king with these treasures. Thomas then succeeded in converting this king and his brother Gad to Christianity, but was finally executed at the command of King Mesdeus by lance-thrusts after having performed numerous miracles and converted multitudes of people.

Since historically we know nothing more of Thomas than that he was one of the twelve Apostles (whom Wellhausen looks upon as a body instituted after the death of Jesus) this story has been considered from the first to be legendary in its main features. If the activity of St. Thomas in East Persia and the neighboring Indian country is unhistorical, the same is true of the later legends according to which the apostle is supposed to have founded in South India the community of the so-called "Thomas Christians." Since we have learned from coins and from an inscription that a King Gundaphorus, or rather Gondaphares, ruled over Parthia and other East-Iranian districts

as well as the border lands of India, an entire change of view has taken place among French and English-speaking indologists. There the conviction has spread in wide circles, without reference to the facts, that before the middle of the second century Christianity had not succeeded in extending its limits to any great breadth, that that part of the legend which tells of St. Thomas's activities in Parthia and in the northwestern part of India is credible. Not only Sylvain Lévi and Hopkins have given utterance to this effect, but also the English scholars W. R. Philipps, Fleet, Grierson, W. W. Hunter and others. We would protest vigorously against this view. What Alfred von Gutschmid declared in the year 1864 in his famous treatise on "Names of Kings in the Apocryphal Stories of the Apostles"[34] still stands to-day. Gutschmid rightly emphasizes the great intrinsic improbability that Christianity could have spread to such a remote territory in so short a time, before it had set a firm foot anywhere in Western Persia, and he adds the further information that the legend of St. Thomas is only a transformed Buddhist missionary story. According to the legend in the *Acta Thomae*, Thomas travels from Jerusalem "by the sea" to the realm of Gondaphares and by this remarkably round-about way reaches the Indian city Andrapolis, that is, the city of the Andhra, a South Indian people who attained great power in the first century of our era and extended their sway to the vicinity of the present Bombay.

The localization of the "Andhra-City" has caused much contention since the more original and somwhat more detailed Syrian text of the Acts of Thomas, which was not yet known in Gutschmid's time, has been discovered and has demonstrated that the Greek version is a translation of the Syrian text. In this the city is called SNDRVK which can not easily be identified with Andrapolis. Since

[34] In the *Kleine Schriften*, edited by Franz Rühl, Vol. II, pp. 332 ff.

space forbids a closer investigation of this question here I will only observe, as Professor Th. Nöldeke has kindly informed me, that the only manuscript of the Syrian text belongs to the year 936, hence to a very late time. Therefore a corruption in the name of the city, which can be read Sandarūk, Sandrūk, Sandarōk, Sandrōk, or even still differently, is certainly not excluded. The Greek translator would hardly have invented the name Andrapolis but may have found an equivalent for it in his Syrian original. Nevertheless even if the consideration against Andrapolis can not be gainsaid and Sandaruk should prove finally to be genuine and to belong in the vicinity of the Indus, still Gutschmid's theory of the transformation of an originally Buddhist story of conversion into the legend of St. Thomas would not be injured in the slightest degree.

According to the legend St. Thomas would have traveled a route perfectly suitable for a Buddhist missionary to have traveled from a sacred spot in Ceylon but not for a Christian apostle coming from Jerusalem before the middle of the first century. Moreover, if we accept all the other evidence brought forward by Gutschmid, especially the fact that exactly in the time mentioned by the Thomas legend White India or Arachosia (hence the very realm of Gondaphares) was actually converted to Buddhism, we can no longer doubt that the Thomas legend is indeed only a remodeled Buddhist history of conversion. This remodeling could hardly have taken place before the beginning of the third century.

In the sixth century the Buddha legend of northern Buddhism had traveled west across Iran in the form of the romance of Barlaam and Joasaph (Greek form; Josaphat in Latin) and on account of the ingenious parables inserted in the romance had found its way into the literature of all Europe. This story tells of the conversion of the Indian Prince Joasaph by the ascetic Barlaam. In both characters

is impersonated the one Buddha. How and why this character has been so doubled is related in Ernst Kuhn's *Barlaam und Joasaph*,[35] an essay which bears witness to an astonishingly broad and profound scholarship. Here it is pointed out that Joasaph has originated by the transposition of the Oriental letters in the Indian word Bodhisattva. This romance therefore is of special interest in our investigation because it has given occasion for the adoption of the characters Barlaam and Joasaph among the saints of both the Greek and Roman Catholic churches. In the latter it is first mentioned in a list of saints of the fourteenth century. However it is amusing to note that the Bodhisattva distorted into "Josaphat" is to be found in such strange company, and further that his relics (*Os et pars spinae dorsi*) have been worshiped in Venice, then in Lisbon and later in Antwerp, and that a church has been erected in Palermo to St. Josaphat.

I have mentioned above the Buddhist Jātakas (page 521). I must now enter more particularly into this literature because the origin of certain Catholic legends to be treated hereafter is to be found in it, and this loan would not be intelligible without some knowledge of the period and character of the sources.

Of particular significance—and indeed not merely for the investigation of the doctrines and conditions of Indian Buddhism—are those tales of edification known by the name Jātaka, in which are related the experiences of the Bodhisattva, the future Buddha. In these "stories of former births" Buddha speaks in his own person and relates in connection with some event or other from his own time, and in application to the situation produced by it, that in a former existence as a man, a fabulous being or an animal, he has had a similar experience. Accordingly Buddha is the hero of all these stories the scenes of which are laid

[35] Munich, 1893.

in earlier times. If several other individuals or animals appear in the stories those which do just and right things are explained at the conclusion of the tale to be forms of the friends and followers of Buddha in a former existence, the wicked ones are identified with his enemies and opponents. The subject matter of these stories is in part very old, in part the material of later inventions; but the latest hardly extend later than the third century after Christ. A splendid characterization of the Jātaka tales may be found in Oldenberg's "Literature of Ancient India."[36]

These fanciful and didactic tales recur in great part in the later expository and entertaining literature of India, for they have enjoyed an extraordinary popularity among the Hindus who have always been particularly fond of fairy tales and fables. Many of them have then traveled from their home over Persia, Arabia and Syria farther into the Occident and have become the common property of all Indo-Germanic nations. In interior, northern and eastern Asia too they have spread simultaneously with Buddhism.

The oldest collection of Jātaka tales—and at the same time the earliest source we possess of all Indian fiction[37]—is written in Pali, the sacred language of the southern Buddhists, and comprises no less than 547 tales. Their earliest ingredients, the verse incorporated among the prose, originated about 400 B. C. while the subject matter itself, as we have already said, is in part much older. We possess a Sanskrit version of 34 of the most favorite of the stories written by Aryasūra in North India under the title *Jātakamālā*, "Cycle of Stories of Former Births"[38]

[36] *Literatur des Alten Indien*, pp. 103-129.

[37] Some beginnings found in the Veda we may here leave out of consideration since they have found no continuation in the Jātaka literature.

[38] The Pali original of the Jātaka book has been edited by the Danish scholar V. Fausböll (7 vols., London, 1877-97), and under the direction of E. B. Cowell it has been translated into English by various young indologists (6 vols., Cambridge, 1895-1907). Three volumes of a German translation by the Munich scholar Julius Dutoit have appeared (Leipsic, 1908-1911). Of

The period of this author is not certain, but since another work of Aryasūra's was translated into Chinese in 434 A. D.,[39] the Jātakamālā can not have been written later than in the beginning of the fourth century. For in those days one century at least was necessary for a book to become famous enough for its translation into a foreign language to be considered.

Though the Sanskrit Jātakas of Aryasūra must be considered in general as later than the Pali Jātakas, yet the material present in the Sanskrit version is in part as old and in individual cases even more original. I mention this because the circumstance is important in connection with the exposition given below.

A few of the Jātakas have been recognized as the sources of Christian legends of saints.

In the first place the question will be asked, by what route this Buddhist material succeeded in reaching Christian legend lore. In reply we may say that as early as in the beginning of the third century, as we know from Bardesanes and Origen, there were Christians in Parthia, Media, Persia, Bactria and even in northwestern India, that is to say, in lands in which Buddhism had penetrated at a still earlier date. Accordingly, there were in those days Christians who had come into touch with the Buddhistic world-conception and civilization; and this has been the case to an even greater degree in the succeeding centuries in other parts of central Asia, especially in Turkestan which through the epoch-making discoveries of Grünwedel, Le Coq, Stein and others we have learned to recognize as the classical land for the mingling of religions.

translations of single parts we shall only mention here the *Buddhist Birth Stories* of T. W. Rhys Davids (Vol. I, London, 1880) which contain the first 40 tales. The *Jātakamālā* has been edited by Hendrik Kern (Boston, 1891) and translated into English by J. S. Speyer (Oxford, 1895).

[39] No. 1349 in *Bunyiu Nanjio's Catalogue of the Chinese Translation of the Buddhist Tripitaka, the Sacred Canon of the Buddhists in China and Japan*, 1883.

The Christians must have been attracted by the extraordinarily mild and beneficent nature of the Buddhist monks whose ethical teachings seemed a surprisingly similar copy of their own views. When all conditions necessary for a closer intercourse were present, interesting stories must have been communicated from one side to the other.

But the Buddhists were established first in the place, and before the Christians arrived they had erected cloisters (*vihāra*) and monuments for relics or memorials (*stūpa*). More than one hundred such stūpas, immense buildings in the form of a hemisphere or bell resting directly upon the ground, have been counted along the ancient Indo-Bactrian royal road beginning from Mankyala on the eastern bank of the Indus.[40] The Buddhists used to decorate these edifices with pictorial representations of scenes from the favorite Jātakas. Such illustrations we find as early as 200 B. C. on the famous stūpa of Bharhut in the central part of northern India. These reliefs on the stūpas and in the vestibules of Buddhist cloisters certainly made a deep impression on the imagination of the Christians, and must have promoted the borrowing and transformation of Buddhist stories for Christian purposes. But directly and without oral explanations they could not have brought about the birth of the Christian legends.

If besides the familiar story of Barlaam and Joasaph only the two Christian saint legends of which I shall speak later on have hitherto been shown to be transformations of Jātaka stories, I hope that this essay will cause some one of the Catholic scholars intimately acquainted with Christian legend lore to give some study to the Jātaka literature which hitherto has been neglected in this connnection. It is very probable that many more sources will be found there either for entire legends of the saints or for some

[40] See L. von Schroeder's account in *Indiens Literatur und Kultur*, 765, Note, 6.

of their individual features. Particularly suited to this task would be H. Günter, the author of the *Legendenstudien,* who in his latest valuable work on "The Christian Legends of the Occident"[41] has established in a comprehensive manner the sources for the motives of the legends of Christian saints in pre-Christian times without however taking Buddhism into consideration.

I. ST. EUSTACHIUS (EUSTATHIUS) PLACIDUS.[42]

The legend of St. Eustace, whose memory has been celebrated in the Roman church since the sixth century, divides naturally into two parts: the first treats of his wonderful conversion,[43] the second of his sufferings and martyr death.

Placidus (in the Greek text *Plakidas*) was the highest commander under Trajan and stood in great favor with the emperor. He was a very virtuous man of a mild and gentle disposition but brave and a great hunter. By his wife Tatiana, who like himself clung to the pagan faith, he had two sons whose childhood was surrounded by the splendor of their father's position. One day Placidus went out hunting and came upon a herd of deer among which he saw one of conspicuous beauty. This one left the herd, enticed Placidus away from his companions into the densest thicket of the forest and then remained standing above a rocky abyss. As Placidus approached the stag he saw between the lofty antlers a bright sparkling cross with the picture of the Saviour. The stag (according to one version

[41] *Die christliche Legende des Abendlands.* Heidelberg, 1910.

[42] M. Gaster, "The Nigrodha-miga-Jātaka and the Life of Saint Eustathius Placidus" in the *Journal of the R. A. S. of Great Britain and Ireland,* 1894, pp. 335-340 (cf. also 1893, pp. 869-871); J. G. Speyer, "Buddhistische elementen in eenige episoden uit de legenden van St. Hubertus en St. Eustachius," *Theologisch Tijdschrift,* 40, Leyden, 1906, pp. 427-453.

[43] This is related by John of Damascus who lived in the eighth century. Stadler and Heim, *Vollständiges Heiligen-Lexikon,* II, 129, Speyer, 431. This legend must therefore have been known still earlier in the Byzantine world. On page 435 Speyer places the Greek text of the *Vita Eustathii* in the *Acta Sanctorum* (Sept. 20) in the fifth century.

the Saviour from the cross) raised his voice and said: "Placidus, why pursuest thou me? I am Christ whom thou worshipest without knowing it. Go back to the city and be baptized." Placidus returned to his home, told his wife what had happened to him, and that same night was baptized by the bishop of Rome together with his wife and children. In baptism he received the name Eustachius or, as in the Greek text, Eustathius.

This legend of conversion by means of a stag with the crucifix was later transferred to other saints, Hubert, Fantinus, Julian, Felix of Valois, and several others.[44] The best known of these is St. Hubert, but in his biography the appearance of Christ in the form of a stag is not nearly so well accounted for as in the original story of St. Eustace.

The second part of the Eustace legend takes up much more space in the original sources than the first, but here it will be sufficient to give a brief summary. The period of Eustace's suffering and probation begins when he loses all his property and when all his slaves, both male and female, die of the plague. Since he is ashamed to live in utter poverty in the place where previously he had been rich and highly honored, he wanders out with his wife and two young sons to Egypt. Because he has not enough money to pay for the passage the skipper permits him and his sons to disembark but seizes upon his beautiful wife whom he retains as a slave. Soon afterwards Eustace loses both his sons who are seized by wild animals, one by a lion and the other by a wolf, while fording a river. In utter abandonment Eustace earns a livelihood as a day laborer. After fifteen years Trajan remembers his old general, for he has need of his help to suppress an uprising, and causes him to be sought throughout the entire Roman Empire. In spite of his wretched condition Eustace is recognized and brought back to Rome where he again

[44] Speyer, 430, 434; Günter, *Legendenstudien*, 38, 39.

assumes command of the troops whom he leads to victory over the rebels. Upon this expedition he finds in a village on the bank of the Hydaspes(!) not only his wife, who in spite of all temptations had remained faithful and pious, but also both his sons for they had not been swallowed by the beasts but were rescued by peasants. The victorious general returns to Rome with his family and is received with great friendliness by Hadrian who in the meantime has succeeded Trajan. However, when Hadrian learns that his general refuses to offer sacrifices in the temple of Apollo and confesses that he is a Christian, he falls into a rage and commands Eustace and his wife and children to be thrown to the wild beasts. But the lion who was set upon the martyrs in the arena would not touch them, so Hadrian compelled them to be thrown into a red hot iron bull where, although they met their death, yet not a hair of their heads was singed. When three days later the people wished to remove their remains the four corpses were found uninjured and shone brighter than snow—a miracle which made the most profound impression on the spectators including Hadrian.

The most remarkable thing about this legend is the fabulous feature of the Saviour appearing in the form of a talking stag which is entirely foreign to Christian conceptions. The attempt to refer this motive to ancient folklore[45] or to explain it by reference to early Christian symbolism can not be considered as successful. In Wetzer and Welte's *Kirchenlexikon*[46] we read: "As the passage in Psalms xlii. 2 compares the longing of the soul for God to the panting of the hart after the water brooks, so early Christian art took up this idea and enriched it by reference to John iv. 13, so that the stag became the image of the believer's soul which thirsteth for streams of grace obtainable through Christ." At this Speyer justly observes that neither this

[45] Günter, *Legendenstudien*, 38. [46] *S. v.* "Hirsch"; Speyer, 436.

figurative language nor the use made in early Christian art of the symbol of the stag as a characterization of the soul longing for the grace of God or baptism can be used for the explanation of the cross-bearing stag of the legend of St. Eustace, for in this legend the stag does not stand for the soul thirsting for Christ but represents Christ himself.

Whatever seems puzzling in the appearance of the Saviour in this animal form disappears when we recognize that we have here to do with a transformation of a Buddhist Jātaka tale. That Buddha was an animal in his former existences and several times the king of stags is a genuine Buddhistic idea occurring frequently in the Jātakas.

The direct source of the first part of the legend of St. Eustace is Jātaka 12 in the Pali collection. The discovery was made independently by two scholars and this fact certainly speaks in favor of the correctness of the observation: first by the Englishman Gaster in 1893, and then by the eminent Dutch Sanskritist Speyer who knew nothing of Gaster's article mentioned above in Note 42, when in the year 1906 he developed and placed on a surer foundation the same thought from a careful investigation of the earliest Greek text of the legend of St. Eustace in the *Acta Sanctorum.*

That the Jātaka just mentioned with the title Nigrodhamiga-jātaka, "The Story of the Fig-Tree Stag,"[47] is sufficiently old to be looked upon as the source for the first part of the legend of St. Eustace, there is no doubt. The story was widely known as early as the third century B. C., for there are three scenes from it represented in a relief on the stūpa of Bharhut mentioned on page 537.[48]

[47] The word *miga* means "stag" as well as roe and gazelle and is usually translated as gazelle. When Dutoit in Note 3 to Jātakam I, 64, renders *nigrodha* as "banana-tree" he confuses the word "banyan" as used by the English, which is a name for the *ficus indica*, with "banana."

[48] See the illustration in Rhys Davids's *Buddhist India*, London, 1903, 193.

For the following account of the Jātaka story I have utilized the translation of Dutoit with a few alterations and omissions.*

* * *

Once on a time when Brahmadatta was reigning in Benares, the Bodhisattva was reincarnated as a stag. At his birth he was golden of hue; his eyes were like round jewels; the sheen of his horns was as of silver; his mouth was red as a bunch of scarlet cloth; his fore hoofs were as though lacquered; his tail was like the yak's and he was as big as a young foal. Attended by five hundred deer, he dwelt in the forest under the name of King Nigrodha (Banyan) Stag. And hard by him dwelt another stag-king, also with an attendant herd of 500 deer who was named Sākha, and was as golden of hue as the Bodhisattva.

In those days the King of Benares was passionately fond of hunting and always had meat at every meal. Every day he mustered the whole of his subjects, townsfolk and countryfolk alike, to the detriment of their business, and went hunting. Thought the people, "This king of ours stops all our work. Let us supply food and water for the deer in his own pleasaunce, and, having driven in a number of deer, bar them in and deliver them over to the king." And so they did. All the townsfolk got together and drove the herds of the Nigrodha Stag and the Sākha Stag into the royal pleasaunce and closed the gate.

The king betook himself to the pleasaunce, and in looking over the herd saw among them two golden deer to whom he granted immunity; somtimes he would go of his own accord and shoot a deer to bring home; sometimes his cook would go and shoot one. At first sight of the bow the deer would dash off trembling for their lives, but after receiving two or three wounds they grew weary and faint

* The English is mainly that of Robert Chalmers (Cowell ed.) except in those slight points in which his translation varies from Dutoit's.—Tr.

and died. The herd of deer told this to the Bodhisattva who sent for Sākha and said: "Friend, the deer are being destroyed in great numbers, and though they can not escape death let them not be needlessly wounded. Let the deer go to the butcher's block by turns, one day one from my herd and next day one from thine; the deer on whom the lot falls shall go to the place of execution and lie down with his head on the block." To this the other agreed.

Now one day the lot fell on a pregnant doe of the herd of Sākha, and she went to Sākha and said, "Lord, I am with young; order me to be passed over." "No, I can not make thy turn another's," said he. Finding no favor with him the doe went on to the Bodhisattva and told him her story. He answered, "Very well; go thy way, and I will see that the turn passes over thee." And therewithal he went himself and laid his head upon the block. Cried the cook on seeing him, 'Why here is the king of the deer who was granted immunity! What does this mean?" And off he ran to tell the king. The moment he heard of it the king mounted his chariot and arrived with a large following. "My friend, king of the deer," he said on beholding the Bodhisattva, "did I not grant thee immunity? How comes it that thou liest here?" The Bodhisattva replied, "O great king, there came to me a doe big with young, who prayed me to let her turn fall on another; and as I could not pass the doom on to another, I have taken her doom on myself and have laid me down here."

"My lord, golden king of the deer," said the king, "Never yet saw I even among men one so abounding in charity, love and pity as thou art. Therefore am I well pleased with thee. Arise! I spare both thy life and hers."

"Though two be spared what shall become of the rest, O king of men?" "I spare their lives too, my lord." And thus the Bodhisattva proceeded to gain from the king the further promise that he would spare also all deer outside

of the pleasaunce, then all other four-footed creatures, and finally all birds and fishes.

After thus interceding with the king for the lives of all creatures, the "Great Being" arose, instructed the king in the Five Commandments, saying, "Walk in righteousness, great king. If thou walkst in righteousness and justice towards parents, children, townspeople, and countryfolk, thou wilt enter the bliss of heaven when this earthly body is dissolved." Thus with the grace and charm of a Buddha did he preach the law to the king. A few days he tarried in the pleasaunce, instructed the king once more, and then with his attendant herd he passed again into the forest. The king abode by the Bodhisattva's teachings, and after a life spent in good works passed away to fare according to his merits.

* * *

The points of agreement between this story and the legend of St. Eustace are so manifold that they can not rest on chance. The most important features are absolutely identical.[49] The king Brahmadatta and Placidus are both passionately fond of hunting. Both in spite of this trait are gentle in disposition but have not yet accepted the true doctrine. Both meet the Saviour of the world (in the Buddhist story it is the future Saviour) in the form of a splendid stag—in the Jātaka with silver-colored horns, in the Christian legend with the crucifix between his horns. In both stories the stag subjects himself to the danger of being slain in order to point out to Brahmadatta and Placidus respectively the way to salvation. Both Brahmadatta and Placidus become converted through the stag and as a result attain heavenly bliss.

In all investigations relating to the dependence of one story upon another, correspondences in incidental features, which for the course of the story are quite insignificant,

[49] Gaster, 337, 340.

have a special importance. I would like therefore to call attention to one such similarity which hitherto has escaped observation.

In the Nigrodha-miga-jātaka the Bodhisattva after his decisive conversation with the king repeats his exhortation on a later day without any visible reason and probably only because Buddhist texts are fond of repetitions. We find exactly this same feature, but in Christian coloring, in the legend of St. Eustace. The Greek text relates that Christ, appearing thus in the form of a stag, requires Placidus to come again the next day after he has received baptism to the same place in order to learn what God requires of him further. On coming back Placidus learns that severe tests await him, but that if he victoriously withstands all temptations he will share in the supreme reward of heaven.

Here we ask in vain what the purpose of this second meeting may be, for what is revealed to Placidus there might equally well have been told at the first meeting. No other explanation for this repetition can be found except that this particular circumstance was taken over from the Buddhist source.

Whoever after all this still doubts the dependence of the legend of St. Eustace upon the Nigrodha-miga-jātaka may put aside his last hesitation when he learns that there is also a source for the second part of the legend in Jātaka literature.

When Gaster and Speyer, the two discoverers of the Buddhist origin of the legend of St. Eustace, point to two different stories as the prototype in this case—the first to the story of Patācārā, the second to that of Visvantara—it does not greatly matter, for the story of Patācārā who loses her husband and her two children (the latter while fording a river[50] as in the story of Eustace) is a twig off

[50] One of Patācārā's children is drowned and the other is seized by an

the same branch from which the Visvantara story is also derived. Its material is changed into the feminine form for the glorification of a woman who belongs to the saints (Arhat) of the Buddhist church.

Speyer looks upon the story of Visvantara (Sanskrit) or Vessantara (Pali) as the proper source of the second part of the legend of St. Eustace, and this tale is better known and more widely spread among the Buddhists than any other except the life of Buddha himself. Since this story is pictorially represented on the Boro Budor, the most famous Buddhist monument in Java, we may assume that such representations also extended into other Buddhist lands at the time when the story became Christianized. In Tibet it is a favorite subject for dramatic representation even to-day.

The substance of the story[51] is mainly as follows: In his last earthly existence before the final one, the Bodhisattva was born as Prince Visvantara, son of King Sanjaya in Jayaturā (Pali Jetuttera) the capital of the country of the Sibi. In order to become Buddha in a future life and to bring salvation to the world from the sufferings of continuous existence, the prince constantly endeavored to fulfil every request made of him and to give away everything that belonged to him. One day an embassy came from the distant realm Kalinga suffering from drought and famine to beseech Visvantara to send them his white elephant that possessed the faculty of bringing rain. The prince at once acceded to this request, expressing the regret that the messengers had not demanded of him, for instance, his flesh

eagle (*Journal of the R. A. S.*, 1893, 554, 558). This detail from the story of Patācārā is evidently the source for the similar feature of the St. Eustace legend.

[51] In the Pali collection of the Jātakas the rather extensive Vessantara Jātaka is the last, No. 547. Its substance is exhaustively related by Spence Hardy in his *Manual of Buddhism*, 116 ff., and by Heinrich Kern in *Der Buddhismus und seine Geschichte in Indien*, I, 388 ff.; briefly also by Oldenberg, *Buddha*, 5th ed., 355. In the Jātakamālā of Aryaśūra the Viśvantarā Jātaka is No. 9.

or his eyes. But his people did not at all approve of the loss of the elephant which was of so much use to them and compelled the king to banish the prince for punishment in the wilderness on Mount Vanka. The prince's wife insisted upon sharing his lot together with their two children.

On the next morning Visvantara called the beggars together and divided all his possessions among them. On his way to exile he bestowed upon needy people who applied to him even the horses and carriage with which he and his family were riding away, and continued his journey on foot up rough paths in the glowing heat of the sun. Dressed as ascetics the four lived on Mount Vanka in huts of foliage and fed upon the fruits of the forest.

After seven months a loathsome old Brahman came that way and begged the prince to give him his two children to serve him. And the father, the "Great Being" was greatly rejoiced to have the opportunity to give something more valuable than anything previous and gave away the two weeping children whom the old Brahman drove away with blows. Then the earth quaked, lightning flashed and thunder resounded in the air and all the gods rejoiced because the Great Being by renouncing his beloved children had done what was necessary for the attainment of Buddhahood. Even their own mother, who returned from a search for fruit to find her children gone, comforted herself with the thought that a greater gift than his own children could no man give.

On the next day Indra, the King of Heaven, came to the obviously sensible conclusion: "Yesterday Visvantara gave away his children and the earth trembled. Now if a common man came to ask him for his incomparably virtuous wife and took her with him then the prince would be helpless and abandoned. Well then I will assume the form of a Brahman and ask Visvantara for his wife. Thus I will put him in a position to attain the highest stage of

perfection; but at the same time I will make it impossible for his wife to be given to any one else and then I will give her back." The prince willingly handed over his wife to the supposed Brahman and again the whole universe shared joyously by similar miraculous phenomena in this unprecedented self-denial. But Indra said, "Now the princess belongs to me and what belongs to another mayst thou not give away," made himself known to the prince and restored his wife to him.

In the meantime the steps of the old Brahman to whom the two children had been given, were turned by the gods to the capital Jayaturā, and there the Brahman was compelled to deliver the children to their grandfather, the king, for a high purchase price. And since the people of Kalinga of their own accord had sent back the white elephant that brought the rain because now there was abundance in their land, the reason for the banishment of the prince had disappeared. King Sanjaya set out with the two children and an immense following to Mount Vanka and brought home his son amid great pomp and the shouts of the people.

This story exhibits the following agreements with the second part of the legend of St. Eustace:[52] Both Visvantara and Eustace belong to the mighty ones of earth. Both lose position and wealth, wife and children. Both go into exile whereat one—according to the highest ideal of Buddhist ethics—surrenders everything even to the last and dearest, while the other—according to the Christian conception—is tested by God by means of the loss of his property and family and by afflictions. Visvantara too submits to a test, and indeed by Indra, the king of heaven, who had already played the part of the testing God in earlier existences of the Bodhisattva and this time in the form

[52] Speyer, 450, 451.

of a Brahman demands his wife of him. Visvantara and Eustace receive back what they have lost.

In supposing that the Visvantara Jātaka has been used in the Christian legend we must assume two things: (1) that the Indian tale went through several transformations in the western countries among the Persians, Syrians and Greeks according as its Christianization demanded, for Eustace could not very well give away his wife and children to beggars but must lose them in some other way; (2) that in the course of these transformations it has also been enriched by motives from other Buddhist stories.[53]

However I can bring forward a proof which has not occurred to either Gaster or Speyer but seems to me to be decisive, of the fact that in reality the story of Visvantara has served as a source for the second part of the legend of St. Eustace, and that we do not have here simply an accidental coincidence.

The rebellion which Placidus was called back by Trajan to suppress had broken out in a remote eastern portion of the realm, and on this expedition the victorious commander regained his wife and children in a village on the bank of the Hydaspes as has been mentioned before on page 540. In that passage I placed an exclamation point after Hydaspes, because the vicinity of Hydaspes, the Punjab, lies so far outside the boundaries of the Roman Empire that it betrays complete thoughtlessness on the part of the author of the Greek life of St. Eustace to place a rebellion against Trajan and the expedition of Placidus in that quarter. For us however this thoughtlessness is of great value; for if by disregarding it we have hitherto been able to look upon the Visvantara Jātaka only as very probably the source of the second part of the Eustace legend, the correctness of this view can not be better confirmed than by reference to the fact that the scene of the

[53] See Note 50.

Buddhist tale has been transferred in an entirely mechanical way to the Christianized redaction where it stands as an impossibility. The father of Visvantara is king in the land of the Sibi (Pali *Sivi*, Greek Σίβαι), and these people lived between the Indus and Hydaspes. In the exact spot where Visvantara regains his wife and children, and where according to the scene of the whole story he must find them, Eustace also finds his wife and his sons, whereas according to the setting of the Christian story he would never have been able to find them there. In this particular no one will be able to see here a play of chance, especially in consideration of all the other similarities.

For the conclusion of the Christian legend, the martyrdom of St. Eustace and his family, we naturally may not look for a Buddhist source. It is a matter of course that we have here to deal with an independent addition of the Christian redactor.

ST. CHRISTOPHER.[54]

The original Greek redaction of the legend of St. Christopher has been placed by Günter[55] in the sixth century. Before his conversion this saint was called Ῥέπρεβος, by the Greeks and "Reprobus" by the Latins who also called the king appearing in this legend Dagnus of Samos in Lycia; in the Greek text he is called Δέκιος βασιλεύς, that is to say, he bears the name of the typical persecutor of the Christians. This king can not be identified with any historical personage.

A medieval source, which reflects clearly earlier ideas, relates that the man who later became Christopher was a

[54] J. S. Speyer, "De indische oorsprong van den Heiligen Reus Sint Christophorus" (*Bijdragen tot de Taal-, Land- en Volkenkunde van Nederlandsch-Indie*, Zevende Volgreeks, Negende Deel. Deel LXIII der geheele Reeks. 'S-Gravenhage, 1910, pp. 368 ff.).

[55] *Legendenstudien*, 25.

giant 12 ells in height, that he had a dog's head and came from the land of cannibals. In Latin sources he is known as Cananæus.

Conscious of his own monstrous strength the giant wished to serve only the mightiest of earth and therefore took service with a powerful king. But when he saw that the king was afraid of the devil he transferred his allegiance to the latter, and finally, because the devil in his turn trembled before the image of the Saviour, he wished to serve Christ as the most powerful of all. Nevertheless he could not receive baptism because he refused to perform the required penances, and therefore was commissioned to serve as ferryman for poor pilgrims and to carry them across a river on his shoulders.

One day a child came to him to be carried across. As the giant waded through the river his burden became constantly heavier and heavier, and finally in response to the question of the giant who knew not what was befalling him, disclosed himself to be the master of the world. Then the real conversion of the giant was completed and he was baptized by immersion in the water. At baptism the giant received the name Christopher, "Christbearer." So the saint is often represented in Christian art, especially in the vestries of churches, as striding through the water with the Christ-child on his shoulders.

The legend goes on to tell that Christopher converted many heathens in Lycia, particularly by having a staff burst forth with leaves and flowers, and for his activity he was thrown into prison by King Dagnus and was sentenced to undergo the death of a martyr. Even during his martyrdom he converted many thousands. After he had been scourged with iron rods they tried in vain to roast him upon a grate and to kill him with arrows, but the arrows were driven from their mark by violent winds.

Finally Christopher was beheaded. The first mention of his martyrdom occurs in the seventh century.[56]

This legend contains nothing remarkable in the martyrdom which is typical in the stories of the saints, nevertheless the rest of the subject matter is highly singular and without analogies in the lives of the saints. Since an historical foundation for the tale is out of the question the attempt has been made to follow Luther's lead and interpret it allegorically. Since such explanations were not satisfactory and the notion arose that an ancient popular pagan personality was hidden in the form of the giant of the legend, Germanic scholars thought of Thor and others of Heracles.

These combinations, however, were not sufficient to explain the strange, fabulous and obviously ancient feature of the legend that St. Christopher was a giant with a dog's head and originally a cannibal. Only by making this feature a starting-point of investigation could the origin of the legend be discovered. An ancient source must be found containing a giant of the kind described and in which, moreover, this giant carries the Saviour of the world upon his shoulders and is converted by him; for this episode is the center and kernel of the Christian legend even though it does not appear at all in the Greek texts nor in the Latin before the thirteenth century.[57]

Günter indeed is of the opinion that the character of Christ-bearer which later belonged to the saint has been constructed solely upon the ground of a realistic verbal interpretation. Certainly Günter will not adhere to this view when he learns that exactly this feature of the Saviour-bearer plays an important rôle in the story of an animal-headed giant in the prototype we shall discuss later.

[56] Stadler and Heim, *Vollständiges Heiligen-Lexikon*, I, 610; *Kirchliches Handlexikon*, edited by Michael Buchberger, I, 926; *Die Religion in Geschichte und Gegenwart*, edited by Schiele, I, 1783.

[57] Speyer, 381; Günter, *Legendenstudien*, 25.

Far less acceptable than Günter's interpretation appears that of Richter[58] who makes the bold statement: "We were of the opinion that there was some reason to assume that the Christ-bearer was an offspring of German imagination and German fancy. It may perhaps be said from a more general standpoint that only German religious sentiment could invent a Christopher." It is to be regretted that German patriotism should occasionally put forth such outgrowths in the field of science for which foreign scholars in the most favorable instance can have only an ironical smile.

Before I enter into the source of the Christopher legend, the question must certainly be settled as to whether the *late testimony* of the Christ-bearer element can really be a reason for considering *this feature itself* as a late one. I believe that Speyer has rightly answered this question in the negative in the essay mentioned above in Note 54. He specifies (page 382) that the absence of earlier literary evidence for the judgment of this case is not of decisive significance since much original material has been lost and the church naturally felt most interest in the martyrdom so that other ancient features fell in the background. Moreover Speyer emphasizes that besides literary sources the testimony of art, that is to say, of sculpture and painting, called for consideration and that this seemed to bespeak a greater age for the Christ-bearer; for the development of Christopher with the Christ-child in the history of art points to ancient tradition and Byzantine prototypes. Thus most scholars who have occupied themselves with the story of St. Christopher consider his character of Christ-bearer an essential and original element of the tale. In no case is the antiquity and originality of the giant and cannibal and the dog's head to be doubted. These three features can not be made to fit in the picture of the hero of Christian faith,

[58] "Der deutsche Christoph," *Acta Germanica*, V (1896) 146; Speyer, 380.

least of all the dog's head. Whence, then, do they originate?

Speyer has answered this question in a convincing manner by pointing out the Jātaka[59] dealing with Prince Sutasoma as the source of the legend of St. Christopher.

The following summary of the Jātaka story is in the main a translation of Speyer's combined presentation (pp. 383-384):

Once upon a time when a king by the name Kauravya ruled over the people of the Kuru, the Bodhisattva was reincarnated as his son and was given the name Sutasoma. Like a genuine fairy-tale prince he was inconceivably rich and at the same time virtuous, of boundless charity, mildness and gentleness—in short just what the future Buddha who never lost sight of his aim would have to be. In his piety he took the greatest pleasure in listening to and appropriating ingenious sayings of a religious and moral character.

One day when strolling about in the park near his palace with a few attendants and enjoying the spring splendor of the young verdure and the opening flowers, he was informed that a foreign Brahman had arrived who knew many such sayings and wished to recite them to him. The prince wished to go to him at once but servants came suddenly running up with the terrifying news that the frightful cannibal had appeared in the park and was looking for the prince. This monster, Kalmāshapāda by name, had once been a king but had been changed by a curse into a man-eating demon with an animal's face. He had promised his bloodthirsty guardian goddess to sacrifice one hundred princes to her. He had already collected ninety-nine and now Sutasoma was to be the hundredth.

[59] In the Pali collection No. 537 (Mahā-Sutasoma-jātaka); in the Jātakamālā No. 31. For good reasons, though without comment, Speyer has combined the two accounts of the Pali and Sanskrit texts because single features of the latter may in this case be regarded not only as just as old and genuine as those of the more detailed Pali version, but also as more original.

Hardly had the threatening danger been announced to the prince when the giant stood before him. His attendants were frightened to death and fled in every direction; Sutasoma alone did not lose his presence of mind. He stepped up to the cannibal and permitted himself to be lifted up and placed upon his shoulders without opposition. Even when the giant ran quickly away with him he felt no terror. Not until he arrived in the horrible dwelling of the cannibal filled with human skeletons and skulls did tears rise to his eyes. This behavior astonished the monster. He asked the prince why he all at once began to weep, whether such a wise and sensible prince still felt a longing for the world which lay behind him or whether he feared death. "Oh no," replied the Bodhisattva, "Not for such reasons do I weep, but because I am deprived of the opportunity of hearing the beautiful sayings of wisdom from the mouth of the Brahman who still sits waiting for me. If thou wilt allow me to return once more to my palace I could satisfy the wish of the Brahman and my own. After I have heard what he has to say I will return to thee again, I promise thee." The cannibal was greatly astonished at this request and at first did not know what to make of it. Then he yielded to the charm which the Bodhisattva exercised upon every one with whom he came in contact. He granted the prince's request, thinking that if the latter did not return he could console himself.

But the Bodhisattva did not permit himself to be restrained by the entreaties of his relatives and friends and returned to the giant. Meanwhile the giant who saw him coming had become curious about the fine sayings which the Brahman had recited to the prince, but the prince would not communicate them to the cannibal saying, "Thou art much too wicked and too great a malefactor; only good and pious people may hear them."

Thus began a long conversation in the course of which

Sutasoma brought about a complete transformation in the soul of the giant. The monster turned over a new leaf, promised to lead a better life and never more to eat human flesh. He released the captured princes and, cured of all his wicked passions, received again his kingdom. Sutasoma likewise returned safe and sound to his own people.

SUTASOMA AND THE GIANT—A BUDDHIST ST. CHRISTOPHER.
From the plates of C. Seeman's work on *Boro-Boedoer*, CLXV, No. 117; page 320 of the text.

This Jātaka contains two features which if looked upon as the source of the Christopher legend will explain its fabulous and miraculous content: (1) the Bodhisattva converts a cannibal with the head of a beast;[60] (2) the can-

[60] The *"dierlijk aangezicht"* mentioned by Speyer surely refers to the description of the Jātakamālā (p. 210, lines 16 and 17 in Kern's edition): "His hair was covered with dirt and hung down in disorder over his face which was covered also by a long tangled beard as if by darkness." Indeed this is a description which in its pictorial representation would greatly resemble the head of a dog.

nibal carries the Bodhisattva on his shoulders and hurries away with him. The distinctions between the two narratives are explained by the difference between the Christian and Buddhist manner of thought. Whoever would deem this difference too great to recognize the Jātaka as the prototype of the Christian legend should note that in this case the pictorial representations of this favorite tale of the Buddhists must have been of particular significance for their transference to the Christian world.

On the Boro Budor[61] the story of Sutasoma is given in four reliefs one of which shows the giant placing the prince upon his shoulders. There is no doubt that pictorial representations of this story as well as of many other Jātaka tales were located in great number in Buddhist cloisters and stūpas not only in far-away Java but also in western lands.

Speyer even denies an internal connection between the Sutasoma story and the Christopher legend and founds his proof entirely upon the effect of the pictorial representations. He thinks that the Christians would have interpreted the picture in which the giant is carrying Prince Sutasoma on his shoulders in their own way. It seems to me that such a disconnection of literary influence goes too far. Christians would never have been able to have derived the material for the legend of St. Christopher solely from pictures. This would only have been possible when the Buddhists gave them the explanation that the man carried by the giant was the future Saviour of the world. And when the Buddhists had once told this they would certainly also tell in their well-known loquaciousness the whole story which was then worked over by the Christians. Without the assumption of the influence of the *story* the dependence of the Christopher legend upon the Buddhist source would to me be unintelligible.

[61] See page 546.

I believe I can produce a new reason for this dependence which Speyer has not brought forward. According to the Pali version of the Jātaka, the cannibal lay in ambush to steal the prince, and for this purpose he stepped into a pool of water within the royal park and hid his head under a lotus leaf, seizing the prince just as he stepped out of the pool after bathing. Hence according to the Pali Jātaka the cannibal placed the prince on his shoulders *on the bank of an expanse of water* as Christopher did the Saviour in the Christian legend. Then too the landscape may have been visible in the background in the Buddhist pictures. This correspondence of scenery seems to me to be not unessential, since this incident of the Buddhist prototype—and incidents unimportant in themselves are always of particular significance in questions of loan —explains the Christian feature in which the giant strides through the river, for which only a slight working over and addition was required. This conception seems to me closer to the facts than Speyer's notion (page 388) that the river which St. Christopher fords with the Christ-child has its origin in the current Buddhistic simile in which earthly life is compared to a river upon the farther side of which lies the haven of salvation.

On the other hand I agree with Speyer when he answers the question as to how Christ came to be represented in the legend as *a child* by saying that this conception has been derived from the relation of the burden to the bearer as shown in the pictorial representation of the Buddhist tale. The tiny figure which is carried by the giant made the impression of a child upon the spectator.

Speyer closes his interesting essay with the words: "*Habent sua fata.....anthropophagi!*" Seldom at any rate will anybody make so splendid a career as the man-eating giant of the Indian fairy-tale who has become one of the best-known saints of Catholic Christendom.

The transmissions from the Buddhist to the Christian world discussed in this paper and which must be placed from the third to the sixth centuries, are apt in my opinion to throw light upon the coincidences in the forms of worship of the two religions which have long attracted attention. The following elements of worship are common to Buddhism and Christianity: cloisters with their monachism and the distinction between novices and ordained monks and nuns, the celibacy and tonsure of the clergy, confession, veneration of relics, the rosary, the shepherd's crook in the Buddhist and Catholic churches, the church spires paralleled by the towerlike reliquaries and stūpas of the Buddhists, and the use of incense and bells.[62]

The great theological works of reference in both Christian confessions make practically no mention of these coincidences even in their more detailed articles, and explain all of the above-named phenomena on the Christian side as genuine and independent outgrowths of Christianity. Nevertheless the correspondence with the external forms of the Buddhist church are so numerous and so close that it is difficult indeed to regard them as the play of chance. Likewise it can hardly be made to seem credible that all these phenomena have arisen from similar intellectual tendencies conditioned by the nature of both religions and independently of each other. If we consider that they are collectively older in Buddhism than in Christianity, and that from the beginning of the third century Christians were acquainted with them in the same localities in which we must assume the loan of the Buddhist legendary material—that is, in Persia, Bactria and Turkestan—then we are justified in asking why the externalities of the religious life of Buddhism may not have served the Christians as a

[62] R. Spence Hardy, *Eastern Monachism*, London, 1850; Peter von Bohlen, *Das alte Indien*, I, 334-350; A. Weber, *Indische Skizzen* (Berlin, 1857), 58, 64, 65, 92; *Ueber die Krishnajanmashtami* (*Krishna's Geburtsfest*), Berlin, 1868, p. 340.

model as well as Buddhist edificatory tales. To my knowledge there is no historical evidence which contradicts the assumption that these above-named elements of worship have been borrowed from Buddhism by Christianity.

The first cloister-like colonies of Christian anchorites have been traced to the Egyptian desert in the fourth century, and hence Egypt is regarded as the cradle of Christian monasticism."[63] But almost as early—even at the beginning of the last quarter of the fourth century—we find it in other Oriental countries, especially in Syria where it quickly arose to a flourishing condition. The monks on the mountains around Antioch devoted themselves as early as towards the end of the fourth century to the education of young manhood.[64] Although the prevailing theory is that monasticism spread there from the small beginnings in upper Egypt, this does not seem to me probable. Grützmacher[65] at least raises the question whether Christian monasticism is as autochthonous to Syria as to Egypt and says that it cannot be positively asserted. "Autochthonous," however, means to Grützmacher only the possibility that Christian monasticism may have developed in Syria from the early Christian asceticism without Egyptian influence. The other possibility, that Buddhist influence might have made itself felt from the neighboring countries on the east, in which at that time Buddhism had spread with its cloisters and its monks, does not occur to him. To me nothing seems more probable than this.

[63] The view held by H. Weingarten and Albrecht Dieterich that Christian monasticism was derived from the Serapis hermits has been completely refuted by Erwin Preuschen in his *Mönchtum und Serapiskult* (2d ed., Giessen, 1903) and henceforth may be considered as settled once for all. The attempt of Hilgenfeld (*Zeitschrift für wissenschaftliche Theologie*, 1878, 149) to derive the beginnings of Christian monasticism in Egypt from Buddhism is overthrown by the fact that Buddhist influence on Egypt can not be proved.

[64] F. X. Kraus, *Real-Encyklopädie der christlichen Altertümer*, II, 406.

[65] In *Herzogs Realencyklopädie für protestantische Theologie und Kirche*, 3d ed., XIII, 221.

The requirement of celibacy among the clergy first appeared in the Christian church in the fourth century, but met continued opposition for seven hundred years until it finally became law in the eleventh century under Gregory VII. The tonsure as a distinguishing mark of the clergy first occurs at the end of the fourth or beginning of the fifth century, and was originally bestowed at the time of ordination as an accompanying ceremony[66] just as in Buddhism.[67] Confession, one of the oldest institutions of Buddhist communal life, did not enter into Christianity until the third century.

Veneration of relics does not occur in Christianity before the latter half of the third or the beginning of the fourth century; in the middle of the fourth, the custom of dividing the remains of martyrs, instead of burying them, in order to give a share of them to as many as possible, appears to have been general *in the Orient*.[68] This custom has prevailed in Buddhism from the earliest times. As early as in the year 477 B. C. the relics of Buddha's body were divided among several princes of the faith.

There can no longer be any serious doubt as to the Buddhist origin of the rosary, which has usually been assumed to have first been brought to Europe by the crusaders. The Buddhists have the rosary in common with Brahman sects; with the former it consists of one hundred and eight beads and has come into general use in northern Buddhism. Albrecht Weber offers a plausible explanation of the word "rosary" (*rosarium*; German *Rosenkranz*, "garland of roses") which had seemed unintelligible. According to his view the name is a mistaken translation of the Indian word *japamālā*, "garland of prayer," which

[66] Sägmüller, *Lehrbuch des kath. Kirchenrechts*, I, 150.

[67] But it must not be overlooked that in Egypt since antiquity the shaving of the head was customary among the priests of Isis and of Serapis. *Herzogs Realencyklopädie*, 3d ed., XIX, 837.

[68] *Op. cit.*, XVI, 631, 632.

was wrongly interpreted as *japāmālā*, "garland of roses" (*japă* = prayer; *japā* = rose).

As to the use of the spire in Christian architecture, such early investigators as Ricci (1857) and Unger (1860) found its prototype in India and Persia where in their opinion the cradle of Christian tower-construction is to be sought.[69] Ancient Byzantine architecture is very closely related to that of the Buddhists, especially in Armenia.[70] The use of incense was condemned downright by the earliest Christians because it called too much to mind the pagan worship;[71] it was first introduced into the Christian church during the fourth century. The use of the bell in religious service is not traceable in Christianity until rather late. Gregory of Tours (died 595) is the first positive authority for it. In the first centuries when the Christians were subject to the persecutions of the pagans, the summons to meetings for worship could be given only by the most noiseless signs possible that would not attract the attention of the pagans. Not until the conversion of Constantine (beginning of the fourth century) was it possible to use noisy signals to invite to worship.[72] In spite of their late attestation, church-bells have been looked upon as a product of Christianity, and at best it was only observed that they had precursors in Judaism and paganism, for instance in the golden bells with which the mantle of the Jewish high priest was adorned at its lower edge together with cotton pomegranates.[73] However this is a very different matter from the bells which call to worship in Buddhism and Christianity. Bardesanes speaks of bells in India as early as the year 175.[74]

[69] F. X. Kraus, *Real-Encyklopädie*, II, 866.

[70] A. Weber, *Indische Skizzen*, 58, Note 1.

[71] Tertullian, *Apol.* 42 in Bohlen,, I, 344-345.

[72] *Ibid.*, I, 622, 623.

[73] *Herzogs Realencyklopädie*, 3d ed., VI, 704.

[74] Bohlen, I, 346.

Single correspondences in the forms of worship would be of no significance for the question of historical connection, but in my opinion such a profusion as we have here makes a borrowing on the part of Christianity highly probable in consideration of the late evidence of the Christian parallels throughout, especially as the path traveled by the loan I have assumed seems perfectly clear. More than a great *probability* can not be asserted at this time; *certainty* can be hoped for only from new discoveries of decisive importance in countries now under investigation, especially Turkestan.

Finally it should be mentioned that the common utilization of the halo in both Christianity and Buddhism comes from classical antiquity. On ancient Roman monuments the nimbus is seen repeatedly in pictorial representations of the gods and apotheosized emperors; in Christianity it appears at the earliest at the end of the third century.[75] Hence it has been transmitted to Buddhism from the Occident and indeed at so early a date that the figure of Buddha appears with a nimbus on coins of King Kanishka (about 100 A. D.) It may have come even earlier to India directly from Hellenism.

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[75] F. X. Kraus, *op. cit.*, II, 496.

SOME MODERN ADVANCES IN LOGIC.

MATHEMATICS is traditionally supposed to be occupied with questions about number and quantity. During the last thirty years or so certain mathematicians —a German named Frege, an Italian named Peano, and later, in England, Mr. Bertrand Russell and Dr. A. N. Whitehead—have been studying this sort of question: Take any mathematical proposition; prove it carefully, that is to say write down completely all the logical steps by which that proposition follows from more simple ones; then enumerate completely the fundamental notions in terms of which the notions occurring in that proposition are defined, and the principles of inference used. Euclid attempted—in a way that to modern eyes is very unsatisfactory, whether we consider his tacit assumptions or his prolixity —to reduce the foundations of geometry to a set of definitions, postulates, and axioms. Euclid's definitions are often (as in the case of those of a point and a straight line) only would-be explanations of certain ideas which everybody is supposed to have, and which are really assumed as primitive notions which are a necessary preliminary to what follows. Further, Euclid does not reckon among his axioms and primitive ideas the principles, such as the syllogism, and the fundamental ideas of logic itself. He tacitly assumes these as preliminary to geometry.

Modern people have gone far beyond this. Peano's work, though in some ways not nearly so fundamental and

subtle as Frege's, has become far better known than the German's. This is owing to the noble self-sacrifice of Peano himself. For years past he has spared neither time nor money in the editing and publishing of a journal and a periodical collection of mathematical propositions expressed in the symbolism partly invented by himself. We all know the appearance of mathematical symbols; and some of us know that the introduction of an analogous set of symbols has had incalculable benefit on other sciences, such as logic and chemistry. Peano's symbolism consists of certain very convenient signs for denoting logical notions, so that logical propositions can be translated into a form like that of mathematical equations; logical operations become easily and almost mechanically carried out, and it becomes possible to condense the expression of a long chain of reasoning into a short and readily grasped form.

The idea of such a language is not new. It goes back to Leibniz and Descartes, or perhaps earlier, and began to be vigorously developed about the middle of the nineteenth century by the English mathematicians Boole and De Morgan.

One result of Peano's work was the discovery that all the ideas which occur in arithmetic and geometry and the other sciences usually called mathematical can be defined in terms of the ideas of general logic, such as class, implication, membership of a class, aggregation and disjunction of classes, together with five or six other ideas, such as integer, number, and point. Also Peano's work contained contributions of the utmost importance to logic, such as the perception that inference in mathematics was not the inference of one proposition from another, but the inference of a whole class of propositions from another class.

Mr. Russell, partly helped by a study of Frege's work, and partly having discovered for himself many of Frege's distinctions, took up Peano's work where Peano had left

it, and defined in logical terms alone all of Peano's fundamental mathematical ideas and proved all his fundamental mathematical propositions. Thus nowadays mathematics and logic are seen to form part of a continuous whole.

Further, it now appears that the essential character of mathematical propositions is not, as Euclid would have it, —"A is true, therefore B is true," but "if A is true, then B is true." In geometry, for example, we do not, as formerly everybody used to think, study the properties of the space we live in. We only say things of the form—"if space has such-and-such properties, then it has such-and-such other properties."

Mr. Russell's work, begun in 1900, now seems to be entering the stage of completion. Towards the end of last year the Cambridge University Press published the first volume of a treatise called *Principia Mathematica* by Messrs. Russell and Whitehead. Here are nearly 700 pages, written to a great extent in the modified Peano-symbolism and exposing in detail the modern views on logic and mathematics. Nowadays a mathematician will tell you that, of the two things with which tradition supposes mathematics to deal, number is definable in logical terms, so that mathematics is only a further-developed logic, and quantity is not considered at all. Serial order is, and people tend to confuse that with quantity.

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THE CONSTRUCTION OF THE TABERNACLE.

INTRODUCTION.

EVERY thorough Biblical scholar, as well as every careful reader of the Bible, knows that the specifications given in Ex. xxvi. 1-30 relative to the construction of the Tabernacle, are regarded as insufficient to enable us to reconstruct it. Howbeit, that sacred structure and its service are extensively illustrated in Christian and Jewish literature, and learned men write and lecture about them. This is done according to various theories, traditional and modern, some of which are diametrically opposed to the plain words of the text. These have been indulged in from the time the Pentateuch was first translated into the Greek, some centuries before Christ, until the present day. And yet I affirm, and challenge the whole learned world to contradict me successfully, that the Hebrew text is perfectly plain, and that the specifications given in it are entirely sufficient to enable any practical master builder to reconstruct the Tabernacle at once, without the help of any theory or dictum of tradition. A perfect familiarity with the Hebrew language, with practical mathematics and geometry is all that is needed.

I have given side by side with the English of our common version a translation of the Greek version (LXX), and another of the Chaldean paraphrase, (Onkelos), the two oldest translations we have. I have added my own version in § 5 so that the reader may judge for himself according

to which version the reconstruction is or is not possible without violence to the Hebrew text.

I also hope that this scientific textual exposition, which the Lord has enabled me to give, will open a field of research for those Biblical scholars, who are not afraid of handling the numbers and measures of the Bible.

Indirectly it is demonstrated in this little work, that the words of our text may well be the words which it is claimed Moses received from Jehovah and communicated to the children of Israel in the desert of Sinai.

EXODUS XXVI.

ENG. COM. VERSION.	SEPTUAGINT.	TARGUM ONKELOS.
1. Moreover, thou shalt make the tabernacle *with* ten curtains of fine twined linen, and blue, and purple, and scarlet; with cherubims of cunning work shalt thou make them.	1. And the tent thou shalt make of ten draperies of spun linen thread, and hyacinth, and purple, and scarlet spun cherubim; in weaver's work thou shalt make them.	1. And the dwelling thou shalt make ten cloths of fine spun linen, and blue, and purple, and shining red, figures of cherubim, the work of a master shalt thou make them.
2. The length of one curtain *shall be* eight and twenty cubits, and the breadth of one curtain four cubits: and every one of the curtains shall have one measure.	2. The length of the one drapery eight and twenty cubits, and the width four cubits shall each drapery be. The same measure shall there be for all the draperies.	2. The length of the one cloth twenty and eight cubits, and the width four cubits of the one cloth. One measure for every cloth.
3. The five curtains shall be coupled one to another, and *other* five curtains shall be coupled one to another.	3. But five draperies shall be held mutually one of another; the other of the other; and five draperies shall be held together each to the other.	3. Five cloths shall be joining one with one, and five cloths joining one with one.
4. And thou shalt make loops of blue upon the edge of the one curtain from the selvedge in the coupling; and likewise shalt thou make in the uttermost edge of *another* curtain, in the coupling of the second.	4. And thou shalt make for them hyacinthian cups upon the border of the one drapery on one side, at the joining, and so shalt thou make upon the border of the outer drapery towards the second joining.	4. And thou shalt make loops of blue upon the border of the one cloth at the side of the joining, and so shalt thou make in the border of the second cloth on the side of the joining.
5. Fifty loops shalt thou make in the one curtain, and fifty loops shalt thou make in the edge of the curtain that *is* in the	5. Fifty cups shalt thou make in the one drapery, and fifty cups shalt thou make at the side of the other drapery at the join-	5. Fifty loops shalt thou make in the one cloth, and fifty loops thou shalt make in the side of the cloth of the second join-

ENG. COM. VERSION.	SEPTUAGINT.	TARGUM ONKELOS.
coupling of the second, that the loops may take hold one of another.	ing; being face to face, reciprocally falling against each other.	ing, the loops tending one to one.
6. And thou shalt make fifty taches of gold, and couple the curtains together with the taches; and it shall be one tabernacle.	6. And thou shalt make fifty golden clasps, and thou shalt fit together the draperies one to the other with the clasps. And it shall be the one tent.	6. And thou shalt make fiftv clasps of gold, and shalt join the one cloth with the other by the clasps, and the dwelling shall be one.
7. And thou shalt make curtains of goats' *hair*, to be a covering upon the tabernacle; eleven curtains shalt thou make.	7. And thou shalt make rough hairy clotns, a shelter upon the tent, eleven rough cloths shalt thou make them.	7. And thou shalt make cloths out of goats for a spread upon the dwelling. Eleven cloths shalt thou make them.
8. The length of one curtain *shall* be thirty cubits, and the breadth of one curtain four cubits; and the eleven curtains *shall be all* of one measure.	8. The length of the one rough cloth thirty cubits, and four cubits the width of the one rough cloth. The same measure shall be for the eleven rough cloths.	8. The length of the one cloth thirty by the cubit, and the width four by the cubit of the one cloth. One measure for the eleven cloths.
9. And thou shalt couple five curtains by themselves, and six curtains by themselves, and shalt double the six curtains in the forefront of the tabernacle.	9. And thou shalt join the five rough cloths into a one by itself, and the six rough cloths into a one by itself. And thou shalt double upon itself the sixth rough cloth at the face of the tent.	9. And thou shalt join the five cloths by itself, and the six cloths by itself, and thou shalt double the sixth cloth towards the face of the dwelling.
10. And thou shalt make fifty loops on the edge of the curtain *that is* outmost in the coupling, and fifty loops in the edge of the curtain which coupleth the second.	10. And thou shalt make fifty cups in the border of the one rough cloth, the one in the middle at the joining, and fifty cups thou shalt make in the border of the rough cloth of the second joining.	10. And thou shalt make fifty loops upon the border of the cloth of the one joining, and fifty loops upon the border of the other joining.
11. And thou shalt make fifty taches of brass, and put the taches into the loops, and couple the tent together, that it may be one.	11. And thou shalt make fifty copper clasps. And thou shalt join the clasps out of the cups, and thou shalt join the rough cloths, and it shall be one.	11. And thou shalt make fifty copper clasps, and bring the clasps into the loops, and thou shalt join the dwelling, and it shall be one.
12. And the remnant that remaineth of the curtains of the tent, the half curtain that remaineth, shall hang over the backside of the tabernacle.	12. And thou shalt put down the surplus of the rough cloths of the tent; the half of the rough cloth that is loose below, thou shalt hide under the surplus of the rough cloths of the tent. Thou shalt hide behind the tent.	12. And the surplus that remains in the cloths of the dwelling, half of the remaining cloth shall be redundant on the back side of the dwelling.

ENG. COM. VERSION.	SEPTUAGINT.	TARGUM ONKELOS.
13. And a cubit on the one side, and a cubit on the other side, of that which remaineth in the length of the curtains of the tent, it shall hang over the sides of the tabernacle on this side and on that side to cover it.	13. A cubit from this, and a cubit from that, of the surplus of the rough cloths, from the length of the rough cloths of the tent, shall be a co-covering upon the sides of the tent from this and that side, that it may be covered.	13. And the cubit from this side, and the cubit from that side in the surplus in the length of the cloths of the dwelling shall be redundant on the sides of the dwelling on this side and that to cover it.
14. And thou shalt make a covering for the tent of rams' skins dyed red, and a covering of badgers' skins.	14. And thou shalt make a reddened rams' leather covering for the tent, and a hyacinthian leather super-covering over above.	14. And thou shalt make a cover for the dwelling, of reddened ram skins, and a cover of badger skins above that.
15. And thou shalt make boards for the tabernacle of shittim wood standing up.	15. And thou shalt make styles of the tent from aseptic woods.	15. And thou shalt make the boards for the dwelling of upright standing shittim woods.
16. Ten cubit *shall be* the length of a board, and a cubit and a half *shall be* the breadth of one board.	16. Ten cubits shalt thou make the one style, and one and a half cubits the width of the one style.	16. Ten cubits the length of the board, and a cubit and half a cubit the width of one board.
17. Two tenons *shall there be* in one board, set in order one against another: thus shalt thou make for all the boards of the tabernacle.	17. Two armlets to one style falling against each other. Thus shalt thou make to all the styles of the tent.	17. Two tenons connected one against the other. Thus shalt thou make for all the boards of the dwelling.
18. And thou shalt make the boards for the tabernacle twenty boards on the south side, southward.	18. And thou shalt make styles for the tent, twenty styles on the incline which is towards the north.	18. And thou shalt make the boards for the dwelling, twenty for the point of the south side.
19. And thou shalt make forty sockets of silver under the twenty boards, two sockets under one board for his two tenons, and two sockets under another board for his two tenons.	19. And forty silver bases shalt thou make for the twenty styles, two bases for the one style for both of its sides, and two bases for the one style for both of its sides.	19. And forty supports of silver shalt thou make beneath the twenty boards, two supports beneath one board for its two tenons, and two supports beneath one board for its two tenons.
20. And for the second side of the tabernacle on the north side *there shall be* twenty boards.	20. And the second incline, the one towards the south twenty styles.	20. And for the second side of the dwelling, to the north side, twenty boards.
21. And their forty sockets *of* silver, two sockets under one board, and two sockets under another board.	21. And their forty silver bases; two bases for the one style for both of its sides, and two bases for the one style for both of its sides.	21. And their forty silver supports, two supports beneath one board.

ENG. COM. VERSION.	SEPTUAGINT.	TARGUM ONKELOS.
22. And for the sides of the tabernacle westward thou shalt make six boards.	22. And at the back of the tent, towards the side of the sea, thou shalt make six styles.	22. And at the extremities of the dwelling westward, thou shalt make six boards.
23. And two boards thou shalt make for the corners of the tabernacle in the two sides.	23. And two styles thou shalt make upon the angles of the tent at their back.	23. And two boards thou shalt make for the corners of the dwelling at their extremities.
24. And they shall be coupled together beneath, and they shall be coupled together above the head of it unto one ring: thus shall it be for them both; they shall be for the two corners.	24. And it shall be out of the same line below, towards the same line they shall be from the heads into one clasp. Thus shalt thou make for both the two corners. Alike let them be.	24. And they shall be tending below, and unto one they shall be tending at the head into one link, thus shall it be for the two, for the two corners shall they be.
25. And they shall be eight boards, and their sockets of silver, sixteen sockets: two sockets under one board, and two sockets under another board.	25. And they shall be eight styles, and their silver bases sixteen. Two bases to the one style at both of its sides, and two bases to the one style.	25. And they shall be eight boards, and their silver supports sixteen, two supports beneath one board, and two supports beneath one board.
26. And thou shalt make bars of shittim wood; five for the boards of the one side of the tabernacle.	26. And thou shalt make bolts of aseptic woods, five for the one style at the one side of the tent.	26. And thou shalt make bars of shittim woods, five for the one side of the dwelling.
27. And five bars for the boards of the other side of the tabernacle, and five bars for the side of the tabernacle, for the two sides westward.	27. And five bolts for the one style, at the other one incline of the tent, and five bolts for the style at the back incline of the tent towards the sea.	27. And five bars for the boards of the second side of the dwelling and five bars for the boards of the side of the dwelling at their extremities westward.
28. And the middle bar in the midst of the boards shall reach from end to end.	28. And the middle bolt in the midst of the styles shall run through from the one incline to the other.	28. And the middle bar inside the boards, barring from extremity to extremity.
29. And thou shalt overlay the boards with gold, and make their rings of gold, for places for the bars: and thou shalt overlay the bars with gold.	29. And the styles thou shalt over gild with gold. And the rings thou shalt make golden, in the which thou shalt put the bolts. And thou shalt over gild the bolts with gold.	29. And the boards thou shalt cover with gold, and their links thou shalt make of gold; a place for the bars; and thou shalt cover the bars with gold.
30. And thou shalt rear up the tabernacle according to the fashion thereof, which was showed thee in the mount.	30. And erect thou the tent after the pattern, which was shown thee in the mount.	30. And raise thou the dwelling according to its rule which thou wert shown in the mount.

I shall first consider the difficulties which the three foregoing translations present to the Hebrew scholar and the practical builder; then the textual and practical difficulties which traditional and modern theories present to the same. Finally I shall show in the last section that a rigid adherence to the original text and the application of sound common sense remove all the difficulties.

DIFFICULTIES OF THE ENGLISH COMMON VERSION.

I shall not advert in this place to the "loops" and the "selvedge" (verse 4) of the Common Version, leaving these for the last section.

The *first* difficulty we meet with is in verse 12. "The remnant that remaineth," is an improper translation of V'S^{e}R^{a}HH H^{o}GH^{ou}D^{ai}F[1]. The word S^{e}R^{a}HH in Ezek. xvii. 6, means "trailing," spoken of a vine, and translated by the Common Version "spreading," which is perfectly appropriate in the verse before us also. It should therefore be translated, "the spreading that remaineth."[2]

Next is the expression "the half-curtain that remaineth." What half-curtain is this? We recollect that the goat's-hair curtains were eleven, that five of them were joined together, and the six others also together, then that the sixth curtain of these six was doubled. And as the single curtain was four cubits wide, the whole 10½ curtains would give us 10½×4=42 cubits. Now the length of the Tabernacle was 30 cubits (see verse 18), and the height of a board was 10 cubits, and this is taken by the Common Version to have been the height of the Tabernacle, so consequently we would have 42 cubits to cover a length of 40 cubits, and two cubits would, therefore, be remaining over.

[1] וְסֹרַח תָּעֹבֶךָ. For an explanation of the system of transcription see the introductory table to the author's "The Mosaic Names of God," *The Monist*, XVII, 390

[2] See Midrash Rabbah Leviticus, Parsha 5 on the word סרח.

Now the text reads (verse 12): "And the spreading that remaineth of the curtains [notice the plural!], the half of the curtain [notice the singular!] that remaineth, shall hang over the back-side of the Tabernacle." Half, therefore, of half the width of a curtain of four cubits width is one cubit; but what is to be done with the other half of the curtain's width the text does not seem to state. The English Common Version avoids the difficulty by translating "the half-curtain," leaving out the little word "of," which, however, it has no more right to do here than to leave out the same word in the first clause of the verse, and translate it here: "And the spreading that remaineth—the curtains," which would give no sense. But the translators of the Common Version did not know that the length of the ceiling was longer by 1.0606+ cubits than the floor of the Tabernacle (as we shall see in the last section) and hence allowed themselves to do violence to the text in order to make out some sense for themselves. This difficulty will not for the present strike the reader as so very great, as it will when he has learned all other difficulties, and their simple solution; for the truth is that the uses and measurements of the soft coverings can not be well understood without a correct knowledge of the frame-work of the Tabernacle.

The *second* difficulty, which presents itself in the specification, is in verse 16. It says how long and how broad each board must be, but it does not say how thick the boards were. Suppose they were two-inch planks and a very serious difficulty occurs. The frame-work was to have three walls only, was therefore open at the front (see verses 18-22). The long walls would be 30×10 cubits. Taking a cubit to be even 20 inches, this would give us a wall 50 feet long and 16 feet 8 inches high,[3] made of 2-inch planks held fast to only one back wall 15 feet long

[3] 600×200", or the cubit at 25", then 750×250".

and 16 feet 8 inches high (9×10 cubits),[4] and made of the same 2-inch planks. This would give a very precarious frame-work which must cave in at its free ends. Nor can we rely on the sockets mentioned in the specification, for they weighed only a talent each of silver (see Ex. xxxviii. 27), being 93¾ pounds, and even though there were two sockets for each board, this amount of metal would not be a sufficient base to secure a board of 16 feet 8 inches high and 2½ feet broad to stand upright against the gust of a desert wind. Nor could the bars that held the boards together help much, for there was only one such bar that was appointed to do this, viz., the one that locked from end to end (see verse 28).

I do not speak for the present of the wrong translations, "tenons" and "set in order one against each other." We shall come to these afterwards. It is sufficient for the present to consider the precariousness of such a frame-work, especially for the desert. It must also be noted that the specifications do not seem to rely much upon the usual stakes and ropes of a tent, for there is no mention of them here, and only a passing mention in one place elsewhere, viz., Ex. xxxv. 18. But perhaps even this difficulty will not appear to the reader as very great.

The *third* difficulty presents itself in verses 23-24. After we think of the three walls erected and the two corners well coapted, we read of two additional boards ordered "for the corners of the Tabernacle in the two sides." Of what use are they there? And how are they to be held there? Now we must recollect that the specification in verse 17 says that *all* the boards of the Tabernacle must be alike, and these two in the corners can, therefore, be no exception. Furthermore, the original word for the "corners" here, M'QooTSGHouTH,[5] means really "cut-

[4] The cubit at 20″ gives 180×200″, or the cubit at 25″ gives 225×250″.

[5] מְקֻצָּעֹת

outs," or "cut-offs," and how can two boards meeting at right angles present a cut-out or cut-off corner? And further, each one of these boards is ordered, according to this Common Version, to be "coupled together beneath, and coupled together above the head of it into one ring." Whereto is this board to be coupled? The text does not say. Coupled to itself, gives no human sense. And are these corner boards after all to be different from the rest? The text does not say so, allowing an exception from the general specification in verse 17, where it says, that *all* the boards must be alike. Or was this the construction of all the boards? Then what was it? Moreover it says in verse 25 that these two corner boards, together with the six of the west wall, are to make up eight boards, and the language implies that these eight boards were to be alike.

I think the reader will here admit that he is "cornered," and that there is no escaping from the difficulty into which the Common Version has brought us. But the difficulties are only in a version and not in the original text, as we shall see.

The *fourth* difficulty is in verse 28 which is rendered, "And the middle bar in the midst of the boards shall reach from end to end." The original words rendered here "middle in the midst," are HaTTiIKhouN B'TVouKh[6] and mean, "the inside one inside." What "inside" then is meant? Shall we think that one bar ran through the thickness of the two-inch planks? That would certainly be of no account for strengthening the walls. Or does it mean the fifth bar between the other two above and below it? Then it ought to have said HaTTiIKhVouN BaiIN HaBBRiIHHiIM,[7] "the middle one between the *bars*," and not "the inside one inside of the *boards*." Moreover, why only one bar to "reach from end to end"? Were it not better to have all the five bars do the same and give the

[6] הַתִּיכֹן בְּתוֹךְ [7] הַתִּיכֹן בֵּין הַבְּרִיחִים

very necessary firmness to these precariously thin and lofty walls? Or, were these four "bars" only to hold the "boards" together, and the important corners to be left with only *one* bar to bear all the strain? This would be too unworkmanlike!

Such are the difficulties of the Common Version. It follows the Latin Vulgate in this instance, which renders the original Hebrew QᵉRᵉSh with *tabula*. This translation is followed by the versions of all Roman Catholic nations and by all versions that have sprung from the Vulgate: so Luther; the Zürich Synod version; the version by De Wette, 1839; so also *Die Bibel für die Katholiken* von Heinrich Joachim Jack, Bamberg, 1845. All have *Brett* for QᵉRᵉSh. The English Common Version has "board"; the Polish version of the British and Foreign Bible Society has *deska*; the Bohemian version of Prague, 1867, has *dska*; the Spanish version, London, 1855, *tabla*; the French version by David Martin, Paris 1845, has *ais*. The Russian versions alone, both by the Holy Synod, St. Petersburg 1878, and by the British Bible Society, printed at Vienna, 1878, have for QᵉRᵉSh *broos,* which means a "beam" or a "four-square beam"; thus they evidently understand the *stylos* of the LXX. This does not decide, however, the question of the identity of the Greek *stylos* and the Latin *stilus,* which means a body formed with a base and running up to a point. The figurative use of *stylos* as "supporting pillar in the church" would also not militate against the idea of a *pointed* pillar in the Tabernacle, for here the *stylos* did support the coverings of it. But in this linguistic question I will not enter here.

THE SEPTUAGINT'S IDEA AND ITS DIFFICULTIES.

This version differs in some very important points from our Common Version, but presents also some insuperable difficulties.

In verse 4 it renders the original L^{oo}L^{o}A^{ou}Th[1] with *angkulas*[2] which means "cups." This translation is far preferable to the Common Version's "loops," not only on linguistic grounds (of which more in the last section) but also on those of structural intention, for these "loops," or "cups" with the "taches," or "clasps" were evidently intended for a nice coaptation of the two large spreads, each 20×28 cubits (at 20 inches = 33′ 4″ × 46′ 8″, or the cubit at 25″, = 41′ 8″ × 58′ 4″, or in inches, either 400″ × 500″ or 500″ × 700″), and for this purpose loops *and* taches were far less suitable than "clasps" going through the edge of the cloth itself. And when they say that these "cups" were to be "hyacinthian," it means that these were to be worked out with hyacinthian thread.

The *first* difficulty we meet with in this version is the same one we met in the Common Version. It is in the 12th verse. The translators deviate most strangely from the original text, and yet even then make no sense as they themselves admit, and as the reader will see from my translation of this translation, which I have endeavored to make as accurate as possible. They evidently had no better idea of the true length of the ceiling of the Tabernacle than the translators of our Common Version, hence their obscurity and violation of the text. This want of knowledge is less excusable in them because, as we shall see immediately, they had a more correct idea of the walls than those who imagined them to have been straight up and down.

The *second* difficulty we meet with in this version, is in verses 15, 16, and 17. The original word Q^{e}R^{e}Sh,[3] which our Common Version renders "board," is here rendered *stylos*[4] which means "pillar," We would have, therefore, a pillar 10 cubits long, or high, (it does not say which), and 1½ cubits wide. But how thick was it? This

[1] לְלָאֹת [2] ἀγκύλας [3] קֶרֶשׁ [4] στύλος

neither the original text nor this version says. But assuming that the width specified means either way, then we would have a pillar of 10×1½×1½ cubits. Then at 20″ the cubit, it will give us 30″×30″×200″ = 180,000″ cubic contents; and allowing 2 cubic inches to the ounce would give us 180,000 ÷ 2 = 90,000 ounces, or 5625 pounds; too enormous a weight for carriage by hand or cart. But in verse 17 the original word IºD'VºuTh,[5] which our Common Version renders "tenons," is rendered here *angkōniskoi*,[6] a diminutive of *angkōn*,[7] meaning "the arm" and also "the bend of the arm," "the elbow." And since in the Alexandrian Greek we regard the diminutive particle as used in the sense of our "like," we may translate that Greek word, "arm-bend-like," and understand that that "style" or "pillar" had two arm-bend-like planes, which on a longitudinal section across the planes would give us a triangle of two equal sides of 10 cubits long, and a base line of 1½ cubits. This of course would reduce the weight of the "style" or "pillar" by just one-half, and make it 2812½ pounds, but still too heavy for carriage by hand or cart, especially in a desert without roads.

The reader will admit the *weight* of this difficulty, and yet he will see bye and bye that this idea of the Septuagint contains a very important truth. Moreover that its translators had the idea that the walls of the Tabernacle were not upright but inclining, is evident from verses 18, 20, and 27, where they reverse the order, and in speaking of the south side they call it the incline toward the north, and of the north side they say, the incline toward the south, and of the west wall the incline toward the west, i. e., looking from the inside at the westwardly inclining plane of the west wall. These two sides, or arms of the "style," the Septuagint describes as "falling against each other,"[8] and this is the correct translation of the original

[5] יָדוֹת [6] ἀγκωνίσκαι [7] ἀγκών [8] ἀντιπίπτοντας ἕτερον τῷ ἑτέρῳ

M'Sh^{oo}L^{o}Bh^{ou}Th A^{e}Sh^{o}H A^{e}L A^{a}HH^{ou}Th^{o}H,[9] which our Common Version in verse 17 renders "set in order one against another." In this connection I must mention Bähr's strange misreading of this word as *anapiptontes,*[10] giving thus the very opposite idea, viz., "falling *away from* each other," from the Septuagint text. See his *Symbolik des Mosaischen Cultus,* 1837, Vol. I, p. 59. He may have had an edition of the Septuagint with such a reading, mine is that of L. Van Ess, Leipsic, 1835.

The *third* difficulty we meet with in this version is in verses 23-24 relating to the corners. In each one of those two corners, which according to this version were only

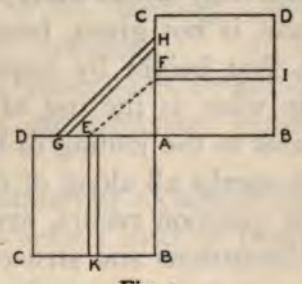


Fig. 1.

closed at the point on the ground but open above, there would have to be fitted one "style" of the same dimensions as the rest, which is impossible, as the figure shows. Let A B C D represent the two square bases of the pillars, which meet at the right angle A, and whose ridges are F I and E K. Then the requirement is, that between E and F should fit in the ridge of another style, viz., the line F I or EK, which is impossible, for E A = FA = ½ base line, and these are the two sides of a rectangular triangle whose hypotenuse is EF<2AF; but 2AF=FI=EK, and could not get in to fill out the corner, but would be stopped about the points G H. The reader will notice that the practical difficulty is to know what the other line of the base is, for the text gives only

[9] מְשֻׁכָּכֹת אִשָּׁה אֶל אֲחֹתָהּ [10] ἀναπίπτοντες

the one of 1½ cubits, but says nothing of the other, and we have seen it cannot possibly be 1½ cubits on account of weight. How long is it then?

Further, it says in verse 24, "And it [a very strange singular! Perhaps a mistake of *estai* for *esontai*[11]], shall be out of the same line (*ex isou*[12]) below, towards the same line they shall be (*kata to esontai isoi*[13]) from the heads into one clasp." If then the "style" was a solid timber, what does it mean: "out of the same line below," and "toward the same line above"? Should this line refer to the perpendicular height of the style? But this line is not given, for that other line of the base, or the thickness of the style at the base, is not given, from which we might possibly ascertain that height by construction or otherwise. Then again what is the use of that clasp at the heads? Does it refer to the joining of two styles together at the top? But it speaks all along of only one style.

Then again the question recurs, are the corner styles different in their dimensions and structure from the rest? But this would be against the specification in verse 17. Let the reader read this difficulty over again, and he will see that it is insuperable.

The *fourth* difficulty is again in verse 28. How shall the middle bolt be made to run through the twenty styles on the south and the north, and the six styles, or perhaps the eight styles on the west side? This part of the specification is not less unsatisfactory than the rest.

And yet the specifications are very plain, and the writers of the Septuagint came very near understanding it.

ONKELOS'S IDEA AND ITS DIFFICULTIES.

These are essentially the same as those presented in our Common Version, the difference being only this, that Onkelos adhered more closely to the original text, which

[11] ἔσται for ἐσονται [12] ἐξ ἴσου [13] κατὰ τὸ ἐσονται ἴσοι

he could do as he wrote in a cognate dialect, merely transcribing certain difficult words. The differences are the following:

In verse 12 he says, "half *of* the remaining cloth," and not as our Common Version, which leaves out the "of."

The word SeRaHH[1] rendered in our Common Version "remnant," he merely transcribes Chaldaically SiIRHHoA.[2]

In verse 17 he merely transcribes the original M'Shoo-LoBhouTh[3] Chaldaically M'ShaLBhiIN[4].

In verse 24 he renders the importantly differing two words TouAaMiIM[5] and TaMiIM[6] with one and the same word M'KhaVNiIN[7] = "tending," just as our Common Version does with "coupled."

In verse 28 he renders B'TVouKh[8] by B'GaiV[9] = "inside," and not as our Common Version does, "in the midst."

In all other points our Common Version is a perfect counterpart of Onkelos's evasive paraphrase.

TRADITIONAL AND MODERN THEORIES AND THEIR DIFFICULTIES.

The ancient Jewish sources on the structure of the Tabernacle are (1) the BaRaiIIThа DiMLaeKheTh HaM-MiShKaN,[1] which means "The Extra-Mishnaic Treatise on the Work of the Tabernacle." There are three editions of this work (*a*) Venice 1602; (*b*) Hamburg 1782, which occurs at the end of a treatise on oaths, containing also "A New Version of the Midrash Rabba on the Blessing of Jacob on his Sons," by Rabbi Hai Gaon. Of this edition I have only the first leaf of the fascicle of the treatise on the Tabernacle treating of the frame-work and coverings, and of the court. The most valuable edition (*c*) is

[1] סרח [2] סירחא
[3] משלבת [4] משלבין [5] תאמים [6] תמים [7] מבוונין [8] בתוך [9] בנו
[1] בריתא דמיאכת המשכ

that by Heinrich Flesch as his inaugural thesis for the Doctor degree before the Philosophical Faculty of Zürich, June 18, 1892 (*Die Barajtha von der Herstellung der Stiftshütte nach der Münchener Handschrift.* The manuscript from which this Flesch edition was made is Cod. 95, perhaps the most valuable one of the great Munich Talmud manuscripts, and was written in 1342. Dr. Flesch's dissertation leaves nothing to be desired so far as this manuscript is concerned, but as a key to the construction of the Tabernacle according to the specifications in the Pentateuch it is unsatisfactory.

The time when this Baraitha was written Dr. Flesch thinks may be safely set as the third century A. D. What I did not find in Dr. Flesch's comments on the text of this treatise I stumbled upon later, viz., (2) Mishna 3 of *Tract. Shabath*, Chapter 12, and both the Babylon and the Jerusalem *G'marouth to* it, which I shall give fully in my translation of and comments on verses 24-25 (pp. 602 f.).

(1) The difficulties which occur now to us in an attempt to reconstruct the Tabernacle, occurred also to the ancient Rabbis, and yet they had no more to go by than we have now, viz., the *apparently* obscure specifications in the original text. Hence they theorized. The first difficulty that presented itself was the number given for the QeRoShiIM (translated "boards," "beams," "styles") in the west wall, and for the two corners there, viz., six and two, and which it is specified are to be counted together as eight. These would, therefore, give 12 cubits width to the Tabernacle. But then the pieces of the second covering were only 30 cubits long, ten of which would be required for each wall south and north, leaving, therefore, 10 cubits for the ceiling's width. This measure of the width appeared to them as imperative, since the Temple of Solomon was 20 cubits wide, (1 Kings vi. 2), so this Tabernacle must be just half as wide, and the 30 cubits' length of the

second cover would just fit it. The two corner boards would then give only half a cubit sticking out at each end. But there are specified two sockets for each QᵉRᵉSh, which evidently indicated it to be thicker than a mere plank. How thick then? The text does not say, for it only speaks of the length and width. They theorized *one* cubit. Then they theorized further, that the sockets were one cubit high, into which two tenons, one cubit in length were cut out from a QᵉRᵉSh and fitted in, so that nine cubits of a QᵉRᵉSh were left above the two sockets, and this diminution of one cubit in the length (height) of the wall was again found in its thickness, and the 30 cubits length of the second cover would then reach from above the sockets to the same point on the opposite wall. But the weight of such a beam, (10×1½×1 cubits) presented an evident difficulty. So another traditional party theorizes (from that remnant of a tradition, which we still see in the Septuagint translation) that the beams were only 1×1½ cubits at their base but tapered off on two sides to one fingers' thickness at the opposite end. This would diminish the weight of a QᵉRᵉSh by nearly one-half. The length then across the frame-work would be 1 cubit for the socket, 9 cubits for the QᵉRᵉSh, ½ cubit for the space of the slanted off thickness at the top, 10 cubits for the width across (as on the ground), then again ½, 9, and 1 on the other side, hence 1+9+½+10+½+9+1 = 31. These two half cubits, which the squared or slanted off beams would add to the width of the ceiling, this second traditional party does not account for, for they say, (*Babyl. Talmud,* tract Shabbath, fol. 98, b) that according to the slanting theory, the first cover of 28 cubits length would reach from above the socket to above the socket across, and the second cover, of 30 cubits length, would reach from below the socket to below the socket across. But a more serious difficulty for this slanting traditional theory presented itself in the two

corners, for the receding slopes of the walls south and north and west, upwards and outwards from within, would necessarily leave at the corners an open triangular space. This difficulty is answered by saying that the corner beams were differently shaped from the rest.

We see, therefore, that this traditional party violates the clear specification of the text in verse 17, where it is said that *all* the QᵉRᵒShⁱIM of the Tabernacle must be alike in shape and measure. Nor does it meet the physical difficulty of the weight of a QᵉRᵉSh which according to it too would have been 3750 pounds, viz. $(10\times1\frac{1}{2}\times1)\div2$ cubits, the cubit taken even at 20″ and allowing two cubic inches to the ounce.

As to the inside bar spoken of in verse 28, the traditionists say that it ran and kept itself there by miraculous interposition. And the French Rabbi Solomon Itshhaki[2] of the twelfth century A. D. is even willing to believe that that bar ran around the right angle at the west wall and into its beams, of course miraculously.

As to the widths of the two coverings applied to the length of the Tabernacle the traditional theories are these. The slanting theorizers give the remnant spoken of in verse 12 as a trail at the back of the Tabernacle, and for this they had to spare at least 1½ cubits from the second covering of 42 cubits width. But those who theorized the beam to be one cubit thick say that the word "trail" in verse 12 means simply to trail beyond the first covering. But even these last theorizers would also have one cubit of the 42 to spare; they are not clear in their theory, and we may be led to think with Rabbi Itshhaki that they allowed a certain portion of the second covering to hang over the front of the Tabernacle on and over its five pillars (see verse 37). A homiletic traditional touch appears in the

[2] Commonly and erroneously called and quoted as Yarhhi, but better known 'R(a)shi," from the notaricon or initial letters of his true name. See his mentaries to the place in tract Shabbath, and to Ex. xxvi.

conundrum, Why is the Tabernacle like unto a woman? because it has a trail behind itself like a woman who goes in the street; and like her the same French rabbi thinks, the Tabernacle must have had a sort of a veil in front of its face.

These rabbinical, traditional theories, physically impossible and textually inconsistent as they are, are followed nevertheless by many writers, particularly the older ones. It is on this account that I have stated them fully.

(2) To Josephus's account of the Tabernacle I do not think it worth while to refer. That peculiar man (despite the praise he receives) a mixture of patriot and traitor, priest and worldling, scribe, Pharisee, Sadducee and Greek literateur, did not seem to have had the least idea that he would be criticised in what he wrote by any one who knew the original O. T. Scriptures, and so he went on *ad libitum*, spinning out ideas, frequently contradictory, merely as it seems to swell the volume of his books and for the possible amusement of his Roman masters who might chance to cast a glance into them, be astonished, and then give praise to their noble *protegé* from *Judea Capta*.

(3) Of modern writers, Dr. K. C. W. F. Bähr, must be mentioned first. In Vol. I of his *Symbolik des Mosaischen Cultus* (1837), § 1, he treats the subject *in extenso*. He sees, indeed, both the textual and physical difficulties, but is satisfied to adjust them more or less in accordance with the above Jewish traditional theories, which have great and almost ultimate authority with him. However, he evidently did not read these traditions in their first sources, but made his acquaintance with them at second hand, chiefly from Rabbi Itshhaki's commentaries, and from other modern Jews. Had he read those traditions in their sources, he could not then have failed to discover that the ancient rabbis were by no means a unit on the subject, as that French modern rabbi made him believe and

as even the Septuagint might have taught him had he not so strangely neglected that earliest written source of Jewish traditions.

(4) A more recent writer on this subject is Dr. August Knobel in his commentary on Exodus and Leviticus in the *Kurzgef. exeg. Handbuch d. A. T.*, Leipsic, 1857, pp. 272-273. The word QeReSh,[3] in verse 15 and following, he derives from a non-existing verb QoRouSh[4] and identifies it with QoRouTS[5] which he translates "to cut off," "to cut in pieces," and so he gets his meaning "board" for our QeReSh. But in the six places where this word occurs in the Hebrew and Chaldee of the Old Testament[6] the word cannot be made to mean anything else but "to dig out," and "to protrude." Yet the author refers to the QeReSh in Ezek. xxvii. 6 in corroboration of his rendering "board." But that very place in verse 7 should have shown him the impossibility of his rendering, for there it would make a banner spread to the winds on a board!

In verse 17, too, he translates IoDVouTH[7] "tenons," and M'ShooLoVouTh[8] "held together by a strip." For this last word he refers to 1 Kings vii. 28, the only other place it is found in the Old Testament. But the first word never means tenon, and the translation of the second does not suit at all in the place referred to.

MiQTSouGH[a9] in verses 24-25 he also translates "corners," and derives this noun from the verb QoTSouGH[a10] which he translates, "to cut off," "to cut in," and hence the derived noun means, "corner." But the noun thus derived can never mean a corner, for this is always a finished end, and not an end cut "off" or "in." The author refers to Ezek. xlvi. 21 f., but this very place should have

[3] קֶרֶשׁ [4] קָרַשׁ [5] קָרַץ

[6] Job xxxiii. 6, Ps. xxxv. 19, Prov. vi. 13, x. 10, xvi. 30, Jer. xxxxvi. 20, and Dan. iii. 8, vi. 25.

[7] יָרֹךְ [8] מְשֻׁלָּבֹת [9] מִקְצָע [10] קָצַע

taught him that the word cannot mean a simple "corner," for how could it be said there that a person was made to pass *through* a closed-up corner?

The corner boards, he theorizes to have been composed each of two boards, one of them half a cubit wide, to give the additional cubit to the nine of the west wall, (the author accepting the traditional 10 cubits in width), and the other limb of one cubit width which lapped over the long wall.[11] He then translates verse 24 thus: "And they shall be double from below on, *and at the same time*,[12] they shall be whole (every one) until its head, until the *first*[13] ring." But aside from other cogent objections to this translation and theory, they are more than sufficiently refuted by the two Hebrew words given in footnotes 12 and 13 as irrefutable witnesses against the author. That this theory makes the corner boards totally different from the rest, and hence in contradiction to the definite specification in verse 17, has of course no weight with such decided rationalists as Drs. Winer and Knobel.

The word MaBhRiIaHH,[14] in verse 28, the author renders "letting pass through." But it can mean nothing else than "bolting" or "barring." And B'TVouKh[15] in the same verse he renders, "between," i. e., as he says, between the two upper and lower bars *on* the boards. But this is no Hebrew language or diction at all!

One had a right to expect better things from such an Hebraist as Dr. Knobel, but it seems that even rationalism does not shield a learned man against the warping influences of traditionalism, and its disregard for the sacredness of the text prevents him too from seeking and finding the simple truth.

[11] This theory has been previously proposed by Winer in his *Bibl. Realwörterbuch*, vol. II, p. 529, note 3.

[12] וְיַחְדָּיו [13] אַמַּת [14] מַכְרִים [15] בְּתוֹךְ

(5) The next recent author I will mention is Rev. T. O. Paine, a minister of the New Jerusalem Church. He treats of the Tabernacle in his work entitled *Solomon's Temple, or* etc.[16] which is superbly and beautifully illustrated. I am at a loss what to say about the author's altogether new theories with regard to the Tabernacle. Space and time forbid entering into details. Yet I would have done so, had the author impressed me with the idea that he understood the Hebrew language thoroughly, which he decidedly did not. All I can say is that the author's imagination worked here boldly and systematically, but he removed no textual difficulty and built upon the translation of our common English version, as though it were the original sacred text itself. But he went beyond it, and put a gable roof on the Tabernacle of his imagination because it suited him. And the text stands pure, clear, and simple, though violated by friend and foe.

(6) The next author I will mention is the well and widely known orthodox divine and commentator, Dr. C. F. Keil. His ideas on the subject I find in his commentary on Exodus.[17] He too accepts the rendering of QeReSh by "board." But instead of "tenons" he translates IoDouTh[18] in verse 17 "pegs," and M'ShooLoBhouTh[19] "bound to one another." He says: "The pegs were joined together by a fastening dovetailed *into* the pegs by which they were fastened still more firmly to the boards, and therefore had greater holding power than if each one had been simply sunk into the edge of the board." And these two pegs were placed into one socket each. How high these pegs were to go up on the boards, how long, broad, thick, and how far their socket ends were to stand from

[16] Published by George Phinney, 21 Bromfield St., Boston, 1861.

[17] Translated by the Rev. James Martin, B. A., Nottingham, and published in Edinburgh by T. and T. Clark, 1866, pp. 178–180.

[18] יָדוֹת [19] מְשֻׁלָּבֹת

each other, the text does not say a word. Yet as a new theory it is refreshing, and might be accepted as a last resort, if the text had not a far plainer meaning and idea, as we shall soon see. The corners and the corner boards he conceives of as do Winer and Knobel, and refers also to Ezek. xlvi. 21-22, as absurdly as Dr. Knobel. He differs only in that he does not translate the word V'I^{a}HHD^{o}IV^{20} at all, and renders "with regard to one ring," what Dr. Knobel translates "until the first ring." Dr. Keil finds the meaning of these words very obscure in some points," but is satisfied with the Winer-Knobel idea about it, together with his new idea, that the ring mentioned here "was placed half way up the upright beam in the corner or angle, in such a manner that the central bolt, which stretched along the entire length of the walls (verse 28), might fasten into it from both the side and the back." But this verily is adding to the essential text, for rings are provided for the bolts specifically enough in verse 29. Nor can Dr. Keil escape the fact that he too makes these corner boards specifically different from the rest, and therefore in contradiction to the clear specifications in verse 17, that *all* boards (Q^{e}R^{a}Sh^{i}IM) of the Tabernacle must be alike.

(7) The next author I will mention is Mr. James Fergusson, F. R. S., F. R. A. S., Fellow of the Royal Institute of British Architects. His ideas about the Tabernacle are given in Smith's *Dictionary of the Bible,* Vol. III, pp. 1450-1454, article "Temple." He too accepts the idea of boards 10 cubits in width, made up by the two corner boards, added to the six of the west wall, and seems not at all troubled either about the tenons or about those peculiar corners and their boards. What Mr. Fergusson is troubled about is that the Tabernacle should have no roof to shed the rain. He therefore *assumes* that there was one of such a con-

[20] וְכֵן תַּעֲשֶׂה

struction as seen in the subjoined Fig. 2, which gives a transverse section of the frame-work and first covering of the Tabernacle. But the reader will ask, what supported this gable roof? Mr. Fergusson answers that there *must* have been a fifteen cubit pillar in the front of the Tabernacle, and a similar one at its rear, and across these a rope was drawn as a ridge pole. But even this is not enough for him, since he still fears that the rope and the curtain upon it will droop, so he *thinks* that another fifteen cubit pole was provided for inside the Tabernacle. By referring to Rev. T. O. Paine's ideas (see above page 588), it will be seen that Mr. Fergusson had been preceded in the gable-

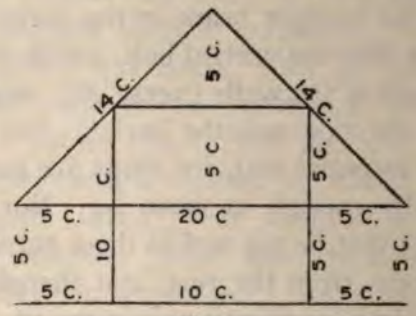


Fig. 2.

roof idea. That there is no mention whatever of these pillars and rope-ridge in the text does not seem to have disturbed their imaginations. It will also be seen that it is essential for the proportions according to Mr. Fergusson's theory that the width of the Tabernacle should be 10 cubits, for there everything is divided by 5. But the text says (verse 22) that the back wall was to be only 9 cubits, or if the two corner boards were incorporated in the length of that wall, then 12 cubits. Mr. Fergusson does not mind it, and relies on Josephus and tradition. But what is he going to do with those spaces on either side and under the eaves of the Tabernacle? He builds nice and convenient cells there, as it to be seen beautifully drawn in his picture on

page 1454. He finds his authority for this third department, which he calls the porch around the three sides, in Josephus (*Ant.* III, 6, 4) who says that the Tabernacle was divided into three parts, though he specifies only two —the *adytum* and the *pronoas*. "The third," exclaims Mr. Fergusson, "was of course the porch, 5 cubits deep, which stretched across the width of the house." But why does not Josephus mention this third department? Why, because he speaks only of three parts, each 10 cubits long, one of which was taken up by the *adytum* (Holy of Holies), and the two parts, 2×10 cubits, was occupied by the *pronoas* (holy). The Hebrew points which Mr. Fergusson makes I had better pass uncriticised. There are clear and minute specifications given in the scriptures, precluding any necessity of the liberty of fancy and imagination as we shall see.

(8) Another authority is *Die Stiftshütte in Bild und Wort gezeichnet von Wilhelm Neumann, mit 79 in den Text gedruckten Abbildungen und 5 Tafeln in Buntdruck,* Gotha, 1861. This includes the entire structure and ritual of the Tabernacle and the encampment of Israel in the desert. The author is a Hebrew scholar. He refers to no translation and traditional authorities and professes an orthodox Christian faith. He contends against interpreting the record of an Oriental sanctuary by Occidental notions. He is familiar with Beduin tent construction (p. 16) and thinks this should guide us in the interpretation of the Tabernacle structure. He gives a picture of two desert tents, a round one and a square one, to guide us, (pp. 56-57). Ten rules (*Normen*) guided him in the present work and the first of these is as follows: (1) Not all things that are necessary for the construction are named in the Law (specifications, I would say) and not everywhere is the manner of that which is named exactly defined

and sufficiently apportioned (*bemessen*), as the purpose of that which is named would demand.

Space and my time and that of the reader do not permit a translation of all the rest of the nine rules that guided the author. I must limit myself to some of the crucial points in the Hebrew text.

(*a*) By QeReSh he understands a thick plank (*Bohle*), in this case here 1½ ells thick, upright square from bottom to top.

(*b*) By IoDouH (Ex. xxvi. 17) Com. Vers. "tenons," he understands two tenons at the bottom of a QeReSh which are connected with each other and fit into silver bases. He comes to this conclusion from verses 22 and 23, which specify six QeReSh at the west side and two at the corners, hence eight in all, and each at 1½ ells broad would give 12 ells for the width of the floor of the tabernacle, but from other specifications the floor was only 10 ells, hence when the QeReSh is 1½ ells thick the structure would be 12 ells on the outside and only ten ells on the inside. But what about the corner QeReSh? This he miters with the last QeReSh coming from either side north and south, and in the top he has some ring arrangement to satisfy a textual point. The top or roof of the Tabernacle he constructs with poles on which the goats' hair canvasses are stretched (pp. 77, 80). All these changes and additions are permissible to the author according to his rule (1) stated above.

(9) The next work I would mention is *Die Stiftshütte, der Tempel in Jerusalem und der Tempelplatz der Jetztzeit, dargestellt von Conrad Schick, Königlich Würtembergischer Baurat in Jerusalem. Mit 47 in den Text gedruckten Abbildungen und 11 lithographischen Tafeln.* Berlin, 1896.

This author knows Hebrew but not so familiarly as the preceding one and not enough to give his own transla-

tion of the verses concerned in the structure of the Tabernacle from their original. He speaks often of Luther's translation. He seems to rely upon Talmudic traditions, upon Josephus, and old and modern commentators. He is commendably modest, and to this he is induced by the difficulties which the original text apparently presents. He gives illustrations both of the ridge construction and of the square box construction of both of which he says he made several models. He, too, sees the difficulties arising from the absence of statement in the original specifications as to the thickness of a QeReSh which he accepts to mean "plank," and finds himself cornered when he comes to the two corners on the west side of the tabernacle. There he gives seven different illustrations from seven different theories by seven different authors. And as none of these concern themselves about the distinct specification in Ex. xxvi. 17 that all the QeRoShiIM in the Tabernacle must be alike whether a wall QeReSh or a corner one, so this author, too is not concerned and satisfies himself modestly by giving seven different possibilities. The difficulties with the coverings this author sees also, and is inclined to the Paine and Fergusson idea of a gable roof on the tabernacle.

(10) The last work I mention is *The Tabernacle, Its History and Structure,* by the Rev. W. Shaw Caldecott, Philadelphia, 1904. This is a book of 236 pages, of which 156 pages are devoted to the demonstration of "The Triple Cubit of Babylonia," and by these varying measures the difficulties of the construction of the tabernacle are to be solved. The author assumes that there existed a tabernacle before the Tabernacle, the pattern of which was shown to Moses on the Mount. That pretabernacle was placed around the twelve pillars and the altar mentioned in Ex. xxiv. 4 and into it the other one was built in which the twelve pillars were so distributed that a ridge-pole could be provided to keep off rain and bad weather. The

Q^eR^eSh, according to this author, was a single board provided with two tenons to fit into two thresholds and the corner Q^eR^eSh at each end of the south and north sides joining the west side were cut out of a solid beam. The specification of Ex. xxvi. 17, that all the $Q^eR^oSh^iIM$ should be alike is passed over in silence.

DIFFICULTIES REMOVED.

There are no difficulties in the *Hebrew* text. A Hebrew like Moses, or Bezaleel, had only to know the law that the square of the hypotenuse of a rectangular triangle is equal to the sum of the squares of the other two sides, then having heard *all* the specifications of the text, he could make his plan first, and proceed to construct the Tabernacle by common workingmen. The difficulties are only in the translations and these have been influenced by unscientific traditions. These aside, the difficulties vanish. But to remove these it will be necessary not only to give a correct translation but to accompany the same with a commentary, which I shall proceed to do.

Exodus XXVI.

(1) "And the dwelling thou shalt make of ten cloths, of twisted linen, and blue, and purple, and wormred. Of cherubimic design shalt thou make them."

In xxvi. 1 the "dwelling" is spoken of. But a dwelling cannot be made of cloth; the word, therefore, here must mean only some important part of it. The "twisted linen," i. e., the linen thread, need not be fine, but only twisted, so as to correspond in the weaving with the other colored thread, which is dyed in the twisted state. The design, or pattern, was to consist of various cherubs, hence the plural "cherubim." Nor was the design to be finished in one piece of cloth, but to begin in one and continue in the rest of the pieces, as our draperies are designed. The

capacity of the looms then obtainable was of course duly considered.

(2) "The length of each cloth, twenty and eight by the cubit, and the width four by the cubit, for each cloth; one measure for all the cloths."

"*The* cubit," one well known, of course, to speaker and hearer. Israel may have had a different cubit from the Egyptian one, one which Jacob may have brought with him when he came to sojourn in Egypt. The proportion of each piece of cloth was 7:1, and this proportion would have to be preserved in the smaller subdivisions of the cubit, without fractions.

(3) "Five of the cloths shall be joined one to the other, and five cloths joined one to the other."

"One to the other," literally "woman to her sister,"[1] denotes the demand of perfect coaptation of piece to piece on account of the pattern which was complete in each set of five pieces.

(4) "And thou shalt make loop-holes of blue upon the border of the one cloth at its joining end, and so shalt thou make in the ending border of the second cloth at the joining."

The word which I render "loop-hole" is L^{oo}L^{o},[2] and as such occurs in this place only. It is evidently an ancient Aramaic feminine form from the masculine L^{oo}L[3] found in the masculine plural in 1 Kings vi. 8, where it refers not to "winding stairs," but to the several apertures in the ceiling of the lower tier of cells, through which the stairs led to the next upper tier above.[4] Those who translate the word "loop" follow the careless example of Onkelos who certainly is of less authority in archeological matters than the more ancient Septuagint which supports my ren-

[1] יְרִיעָה [2] לֻלָאָ [3] לוּל

[4] Compare Buxtorf's *Lex. Chald. Talm. and Rab.* Fisher's ed., Leipsic 1875, p. 574.

dering. These loop-holes were worked out with blue thread. They did not disturb the cherubimic pattern, for there it came to a conclusion, in the five-cloth breadth.

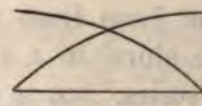
(5) "Fifty loop-holes shalt thou make in the one cloth, and fifty loop-holes shalt thou make in the edge of the cloth, which is in the joining of the second one; the loop-holes fitting oppositely one to another."

The Common Version's rendering: "that the loops may take hold one of another," is impossible, both linguistically[5] and because the loops had to take hold of the taches that intervened between them, and not "one of another."

The proportion 50:28 seems strange, but in 25 inches the cubit is 14:1. But these 50 loop-holes together with the 50 in the opposite spread are related to the 50 crooks by which they were joined, so that the relation is $50:2\times28 = 25:28$ and in inches it is $25:700 = 1:14$.

(6) "And thou shalt make fifty golden crooks, and join the cloths one to another by the crooks; and the dwelling shall become one."

The form and name of the crook (Q^eR^eS[6]) is derivable from the meaning of its verb-root $Q^oR^{ou}S$[7] which means "to stoop," as in carrying a burden upon the back. It occurs in Is. xlvi. 1, 2. Its form might have been thus:



The shanks would be drawn sufficiently apart from each other to admit the thickness of the worked-out edge of the loop-hole to pass, and then lodge on just the half of the base; then the same with the opposite loop-hole would form a steady joint.

[5] מִקַּבְּילֹת = "fronting," is not מְקַבְּלֹת = "receiving."

[6] קֶרֶס [7] קָרַס

We have now a spread of 28×40, a proportion of 7:10. What the object of this division into 2×20 is, is evident from verse 33.

(7) "And thou shalt make goats' cloths for the tent upon the dwelling. Eleven cloths shalt thou make them."

The object of the number eleven is evidently for the purpose of breaking joints with the lower spread, and its better protection. But this will give a surplus.

(8) "The length of each cloth thirty by the cubit, and the width of each cloth four by the cubit, one measure for the eleven cloths."

Here is again a surplus in the length which is evidently for the protection of the lower spread. The proportion of each cloth is 30:4=15:2.

(9) "And thou shalt join the five cloths apart, and the six cloths apart. And thou shalt double the sixth cloth toward the front of the tent.

(10) "And thou shalt make fifty loop-holes upon the border of the one ending cloth at the joining, and fifty loop-holes upon the border of the second joining cloth.

(11) "And thou shalt make fifty copper crooks, and bring the crooks into the loop-holes, and join the tent, and it shall become one."

The sixth piece of cloth being doubled upon itself, and coming to the front, would make this upper spread to break the loop-holes' joint of the lower spread, by covering it with the middle of the sixth goats' cloth (reckoning from the front), which would go 2 cubits further, and thence from its loop-hole's joint it would go 20 cubits still further. The proportion of the original six joined cloths would be 24:30=4:5, and with the one cloth doubled upon itself, 22:30=11:15. The other five joined cloths give 20:30=2:3. The entire spread without folding the sixth cloth, gives 44:30=22:15; with that piece folded, 42:30=7:5.

(12) "And as for the surplus spread in the cloths of the tent, half of the surplus cloth shall spread upon the backside of the dwelling."

When we lay the two entire covers upon each other, there would be 18 cubits of the lower cover from the loop-hole's joint of the upper cover to which the 20 cubits of the smaller portion of the upper cover would correspond and thus give us 2 cubits of surplus; of this the half only, viz., *one* cubit, is specified to spread or trail beyond the dwelling. Where then is the other one cubit to go to? This will be fully accounted for when we come to know the true length of the ceiling of the Tabernacle, as given in the construction of its frame-work.

(13) "And the cubit of this and the cubit of that in the surplus in the length of the cloths of the tent, shall spread upon the sides of the dwelling to cover it on this and that side."

It will be noticed that the specifications do not say a word about the stakes and ropes which usually belong to a tent. The entire lower spread is spoken of here as "the dwelling," and the entire upper one as "the tent"; and the presumption would be that they would make one closed whole with the supporting frame-work except at the back side, where there is to be a trail of one surplus cubit back of it. See verse 12.

(14) "And thou shalt make a cover upon the tent of reddened ram skins, and a cover of Tahhash skins above."

The "cover" here is called M^{i}KhS^{e}H[8] and is derived from the verb K^{o}S^{ou}H,[9] meaning always "to cover close down" upon the object covered. It must be clearly distinguished from S^{o}K^{ou}H[10], which is a transposition of the letters of the former verb and means not "to cover" but "to over-shadow." By attending to this distinction much confusion will thus be avoided. The two covers here must

[8] מִכְסֶה [9] כָּסָה [10] סָכָה

have reference to the top tent cloth alone, and not to the walls of the Tabernacle.

Hitherto the specifications have spoken of the soft parts of the structure. How were its hard supports, its frame-work, to be?

(15) "And thou shalt make the styles for the dwelling of upright standing shittim planks.

(16) "Ten cubits the length of the style, and a cubit and half a cubit the width of each style.

(17) "Two arms to each style, sloping one to its other. Thus shalt thou make for all the styles of the dwelling."

The word which I render "style" is Q^eR^eSh[11] and occurs only in this place, and once more in Ezek. xxvii. 6. Its plural is Q'R^oSh^iIM.[12] On the understanding of this word depends the entire understanding of the structure of the frame-work of the dwelling and the disposition of its coverings. The specifications give a full description of it, and from these the true meaning of the word must necessarily become clear. The styles were to be made of "upright standing shittim *planks*." In verse 37 we read of "shittim pillars," because those pillars may not have been made of planks. But in the construction of Noah's ark, Gen. vi. 14, we read of GH^aTS^aiI G^ouPh^eR;[13] and in the construction of the ark of the testimony, Ex. xxv. 10, we read of GH^aTS^aiI Sh^iTT^iIM.[14] In both instances the first word is in the plural number and in the genitive case. We cannot, therefore, translate, "of *woods* of gopher," and "of *woods* of shittim," but "of *planks* of gopher" and "of *planks* of shittim." The rendering of "wood" in the singular by our Common Version is inaccurate and misleading. The length and width of a style is 10 and 1½ cubits. Each style was to have two arms, I^oD^ouTh.[15]

The reader who is not acquainted with the Hebrew language needs an exposition of this word I^oD^ouTh. The

[11] קֶרֶשׁ [12] קְרָשִׁים [13] עֲצֵי גֹּפֶר [14] עֲצֵי שִׁטִּים [15] יָדוֹת

Hebrew language has two genders for its nouns, masculine and feminine. It has also two plurals, one which designates things that are two in nature, as hands, feet, eyes, ears, etc., and the ending of this dual plural is *aïm*. The Hebrew word for hand is IªD (pronouncing *I* as *y* consonant). The dual plural of IªD is therefore IºDªïIM, meaning "hands." But when the word "hands" refers to other things than the two hands of a human being, as for instance to the arms of an armchair or axles of wheels, or figuratively to shares, parts, powers, etc., the plural of IªD does not have the dual plural form but the ordinary plural of the feminine gender which is VºuTh; and in this case the plural of IªD is IºDºuTh. This word occurs but seventeen times in the Hebrew Old Testament, while the dual plural of IªD, viz., IºDªïIM, occurs 252 times. In Gen. xliii. 34, our Common Version has this word rendered with "times": "but Benjamin's mess was five times (IºDVºuTh) so much as any of theirs." 2 Sam. xix. 3: "we have ten 'parts' (IºDVºuTh) in the King." 1 Kings x. 19: "and there were 'stays' (IºDºuTh) [marginal reading 'hands'] on either side on the place of the seat."

For "tenons" as rendered by Onkelos and our Common Version, there is not the slightest linguistic ground. But two arms must proceed either from a broad shoulder on either side of it, or from a common point. The text says: "they shall be sloping one *to* another." The word "sloping" is M'ShººLºBhºuTh[16] according to the comparatively modern vowelling of Jewish tradition, which makes a *passive participle* of the original consonants of the word. It would be better to vowel the word to read M'ShªL-BhºuTh,[17] as an active participle; but this is of less account. The greater difficulty is that besides in this place this word occurs only in the construction of the pedestals to the ten

[16] מְשֻׁלָּבֹת [17] מְשַׁלְּבֹת

lavers in Solomon's Temple (1 Kings vii. 28, 29), where it occurs in a derived plural masculine noun. Now we might study the meaning of the word there and apply the result to our place; but since Exodus is an earlier Hebrew than Kings, it is logical to study the word in the former and apply the results in the latter. Is it correct to translate the verb-root ShºLºuBh[18] as "to slope"? We shall see when we come to have a full understanding of what a "style"[19] is. At this stage of the specifications for the entire structure we do not have it, for here they stop describing a style and proceed to state how many styles should come to each wall, and on what they were to rest. We listen, therefore, with Moses.

(18) "And thou shalt make the styles for the dwelling, twenty styles at the arid south side.

(19) "And forty silver sockets thou shalt make underneath each style of the twenty; two sockets underneath each one style, for its two arms, and two sockets underneath each one style for its arms.

(20) "And for the second flank of the dwelling on the north side, twenty styles;

(21) "And their forty silver sockets, two sockets underneath each one style, and two sockets underneath each one style.

(22) "And for the two hips of the dwelling westward, thou shalt make six styles."

There were only three walls then. The architectural terms here are borrowed from anatomy and are therefore very clear. We have two parallel flanks which terminate, as it were, in two hips between which comes the inclosing third wall. On the ground, then, we have an oblong of 30×9 cubits, open on the east. But since the two arms of a style were inclining towards each other, the corners would be left open. Let the reader take two narrow strips

[18] שָׁלַב. It may be put in the category of biliteral roots SHL with a determinative third letter as שׁלב, שׁלח, שׁלח and שׁכך, all denoting rapid movement or direction away from the perpendicular.

[19] קֶרֶשׁ

of paper of equal length, and double them across their length and he will have two two-armed styles. Let him then put the width of one arm at right angles to the width of an arm of the other style, so that he will have two equal lines at right angles on the ground, and he will see that the corner formed by the two styles remains open. How shall this corner be closed up? We listen with Moses to the specifications.

(23) "And two styles thou shalt make for the cut-out corners of the dwelling at its hips."

According to the specification given in verse 17, all the styles of the dwelling must be alike; the two styles, therefore, for the two cut-out corners can make no exception. The scientific problem is to make such styles, by the dimensions and description already given, as would be all alike and close up the two cut-out corners. Let the reader make a third style precisely like the two he has made already and try to close up the cut-out corner with this third style; he will see that unless the arm of his style is 10 by 1½ he will not be able to do it. And will he then be able? The question is, How far is one arm of a style to be from its fellow? True, indeed, the specification in verse 17 says that the arms should slope to one another; but at what angle? And are the arms to meet above, or remain at a distance from each other? Again we listen with Moses.

(24) "And they shall become twinning below, and together whole shall they become upon its head, unto one and the same housing.

"So shall it become for the two, for the two cut out corners shall they become.

(25) "And they shall become eight styles; and their silver sockets, sixteen sockets, two sockets underneath each one style and two sockets underneath each one style."

The first part of verse 24 must refer to all the styles

if the specification of verse 17 is to remain inviolate. But lest the difficulty of the corner style should lead to an attempt at such a violation, the specification says in the second part of verse 24 that there must also be styles of this same kind for the two cut-out corners. Then it says that all the styles at the western ends of the two hips of the dwelling shall be counted as eight, to show again that the two corner styles must be like the six of the west wall and of course the other walls. But am I correct in translating M'QooTSGHouTh[20] as "cut-out corners" in verse 24? Let this be answered by the same architectural term in Ezek.

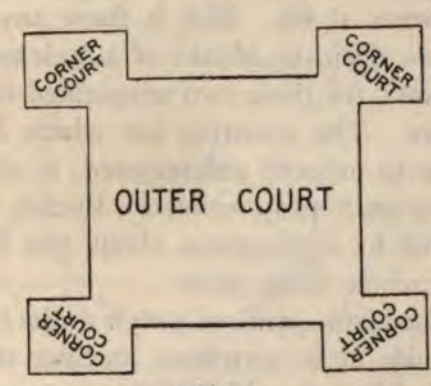


Fig. 3.

xlvi. 21, 22. "And he brought me out into the outer court, and made me pass in the four [cut-out] corners; and behold a court in the [cut-out] corner of the court, a court in the [cut-out] corner of the court. In the four [cut-out] corners of the court, smoking courts, forty long and thirty wide; one measure for the four from the [cut-out] corners." Let the reader leave out what I have put purposely in brackets, and ask himself, How can it be said that a court 40×30 was in the closed corner of another court? And again, how can it be said that a

[20] מִקְצָע׳ת

person *passed* in a corner? Is it not evident that the four corners of the outer court were *cut-out* corners?

The foregoing figure, I think, will explain itself sufficiently.[21]

The specifications about the styles are here at an end, for having shown us this cut-out-corner resulting from the shape of the styles, and having told us to close up that corner with a style we are left to infer what the perpendicular height must be, which is the same as inferring its stretch below from arm to arm; and as to this height no specification is given, for this will differ by a minute fraction in the corner styles. Nor is there any specification given as to how deep the planks of a style are to be sunk into their sockets, for these two unspecified items will correct each other. The scientific law which Moses had to know in order to proceed unhampered, is what we know as the forty-seventh proposition of Euclid, said to have been discovered by Pythagoras about 500 B. C. Fig. 4 will make the whole thing plain.

BCGD is the inside plank of a style at the hip of the wall on the north side at its terminus, meeting the end of the west wall at C; BD is the ridge of this style; and BDMN is its outside plank. ACFH is the inner plank of the style of the west wall, meeting the terminal style from the north at C, and there making with it a right angle on the ground. AF is the ridge of this west wall style, AFEL its outside plank. It will now be seen that AB is the ridge of the corner style, closing in the corner. If we imagine a perpendicular rising from the point C, and terminating on a level with the ridges AF, AB, and BD, then the line AB becomes our *diagonal of construction,* to show us the half distance between the arms of a wall style at the base. For

[21] With this definition of מְקֻצָּע the reader will understand better the passages in 2 Chron. xxvi. 9; Neh. iii. 19–25; also Lev. xiv. 41, and also Psa. xlv. 9, where קְצִיעוֹת means "dusted in corners and folds."

if we imagine all the three ridges coming down straight upon the ground, they exactly halve that distance. Then AB is the hypotenuse of the triangle whose equal sides are AC and CB. Now the 47th of Euclid proved that $AB^2 = AC^2 + CB^2$, and since the two sides here are equal, then $AB^2 = 2BC^2$, and $BC = \sqrt{AB^2}/2$, and thus Moses knew as well as we do what the half distance between the two arms

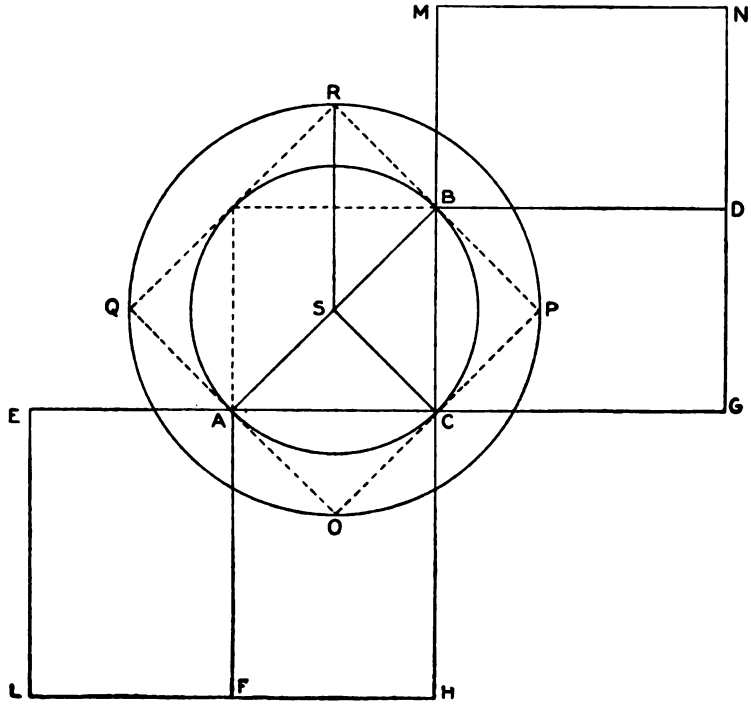


Fig. 4.

of a wall style was at its base. And knowing this, Moses could, as we can, find out the exact height of a wall style, as will be seen from Fig. 5. BC we know is ten cubits, CI is our BC of Fig. 4 whose numerical value we have just ascertained, so we know what the two sides of the triangle CBI are; and as the angle CIB is 90°, and is opposite the longest side of the triangle, then from these three

known functions we can ascertain the third side of the triangle, BI, which is the perpendicular height of the wall style CBK.

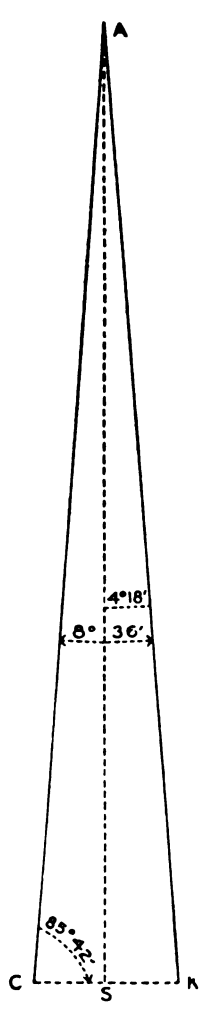


Fig. 5.

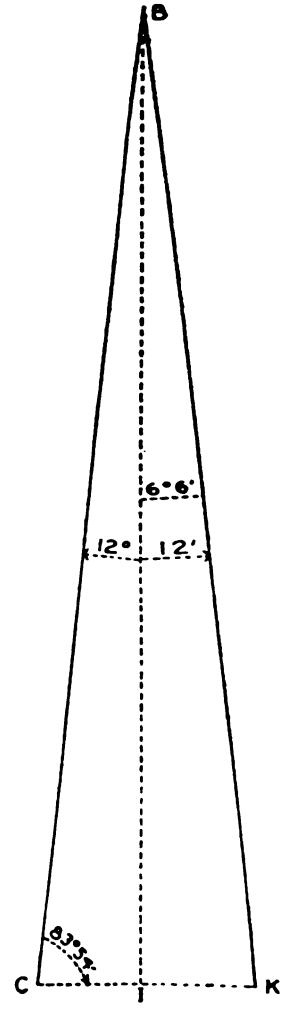


Fig. 6.

But is this the same as the perpendicular height of a corner style? No; for referring to Fig. 4 we see that SC s half the distance between the two arms of the corner

style, and this is just one-half of our diagonal of construction, viz $1\frac{1}{2}/2 = \frac{3}{4}$ of a cubit, less therefore than BC which we have ascertained. Therefore must the perpendicular height of Fig. 6, AS, be more than BI in Fig. 5, the difference being only 0.0285 of a cubit. This minute difference could be easily removed by sinking the plank ends, OP and QR of Fig. 4 (the same as AC and AK of Fig. 6) just that little deeper in their sockets than the planks of the wall styles were sunk in theirs, and for this there is no specification to the contrary. With this correction the ridges of the corner styles come on a level with the rest.

Without previously knowing the meaning of the Hebrew noun Q^eR^eSh we have obtained it from its description and specification in the text, and we can see now how admirably such styles were adapted to fulfil all indications. They combined strength with lightness and compactness for carriage. They would also afford storage room for the appurtenances of the Tabernacle when not on the march, and would probably answer as good a purpose as Mr. Fergusson's cells, (see page 590) without violation of either the Bible text or Josephus. The planks of a style did not need to be thicker than one inch, for against the possible bending of such a long plank provision was made in the next specification, both as to this and the compactness of the walls of the structure at the same time. The two planks were of course beveled at the top to the now ascertained angle, and held together by a strong metallic housing, band or ring. Below, each plank rested on a socket of a talent of silver, about 93 pounds (Ex. xxxviii. 27), which together with the other provisions, next to be considered, kept the planks from slipping out of position. In taking down the structure the planks had only to be pulled out from this top housing and laid together on the vehicles subsequently provided. Compare Num. vii. 8,

with iv. 29-33. 96 planks loaded on four carts will give to each 24 planks, each about 293 pounds (without their gold plating), packing to a height which would leave room to spare for the other things belonging to the styles. Then on a little reflection it will be seen that the three inner sockets of a corner would have to be fitted into each other, thus forming an admirable starting point in laying out the ground at an erection of the structure.

If very ancient traditions are of any value in proving the truthfulness of my discovery as to the real shape of the QeReSh which I deduced from the simple text, then I would point the reader to the fact that unless that shape was as I say we cannot understand the Septuagint translation (or better, paraphrase) of verses 18, 20, 27, (see pages 570 and 578). And this is the same tradition that we have already met with in that other Babylonian rabbinical party on page 583. Yet from neither of these can we get an answer to the important question, What was the thickness of a QeReSh at its base? for both of these declared a QeReSh to have been a solid timber. Hence the Babylonian Talmud simply guessed that it was one cubit, and left us with the absurd impossibility as to the weight of a QeReSh. And yet they speak there (Shabbath folio 98, page *a*) of the 48 QeRoShiIM beams being loaded on 4 two-ox carts! But I stumbled on a far clearer tradition as to the shape and construction of a QeReSh in the Jerushalem Talmud (Shabbath, Chap. 12, Mishna 3, and the Gemarah to it). It is as follows: "Any one who writes two letters (on the sabbath day), whether with the right or the left hand, whether of one or two names, or whether of two signs in any language, is guilty (of violating the sabbath). Said Rabbi Yose,[22] there is no guilt in two letters, except they were for marks, for in this way they marked the QeRoShiIM of the Tabernacle, in order to know each other's mate." To this the Jerushalem Ge-

marah has the following: "Who taught that thing about *the two signs?* (Answer): Rabbi Yose did. What is the meaning of 'in any language?' (Answer): If he wrote a Greek Alpha for an Hebrew Aleph. But was not that marking for fear, lest one put the lower end up and the upper end down? (Answer): They were made like writing reeds (i. e., bevelled off at one end). But was it not for fear, *lest one put an inside one outside, and an outside one in?* (Answer): The housings (viz., those mentioned in verse 29, which they declared to have been on the outside planks) show this. But was it not for fear, lest they be interchanged? (i. e., those of the north south and west). Answered Rabbi Ahha: Their (respective) *inclines* were written on them. (N. B., the Septuagint, verses 18, 20, 27). Well, what if they are changed thus? Answered Rabbi Aimi, It is said (Ex. xxvi. 30), 'thou shalt put up the Tabernacle according to its judgment,' and is there a judgment for a plank? But this is what it means: When a QeReSh was found worthy to be put north, it must be put there, and if south, then south." The unprejudiced reader must see here how much certain traditions knew of my discovery. And yet how many Jewish rabbis, and one of them not less a one than the great Maimonides of the twelfth century A. D. (see his comments to this Mishna), read these traditions and did not understand them. And how many Christian theologians went on theorizing about the Tabernacle, and did not even care to know about these traditions.

I may now return to the lexical consideration of the words which I translate "style" and "sloping," and which I omitted on pages 599 to 601. From the "sloping" structure of a "style," which the text itself teaches us, we can

[22] This is Rabbi Yousse ben HHalafta of the first half of the second century A. D. (*Hamburger Realencyclopedie* II, s. v. "Josse.")

be certain that the rendering of ShºLºuBh[23] as "to slope" is the correct one. This will help us to understand the description of the pedestals of the ten lavars of 1 Kings vii. 28, 29. The Sh'LªBʲIM,[24] "slopes," rendered by the Common Version "ledges," are the side slopes on which rested lion, ox and cherub, as is seen in Fig. 7. And if the reader observes that each of these three squares is so constructed as to give three different radii with which to describe circles in and around them, he will see that this structure probably had reference to the heavenly vision of the first chapter of Ezekiel. And who knows but that this refers to the relation of the radius to the cirmumference?

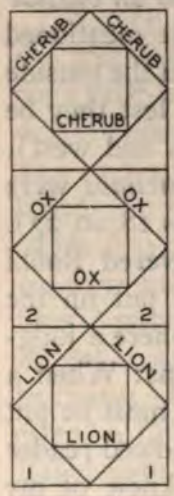


Fig. 7.

As to the word QeReSh[25] let the reader examine thorough and honest authorities, and he will find that the word is not to be found in any language cognate to the Hebrew, with the sense it has in our place. Since I am not writing exclusively for Semitic scholars, I must say no more here, but if any such should challenge my assertion I am ready to substantiate it fully. My own explanation of this unique word is that *it was coined specially for this occasion.* Not the entire word, however, but only the last letter was added to the two-lettered root QR,[26] which is common to both Semitic and Indo-Germanic languages. This is acknowledged by Dr. Friedrich Delitzsch in his *Studien über indogerm.-semit. Wurzelverwandtschaft,* Leipsic, 1873, pp. 88 and 89. I differ, however, from him and others as to the primary meaning of this root. It does not denote, I think, "cold and contraction," but "separation from and joining to a point." This meaning is recognizable in the

[23] שׁלב [24] שׁבּנים [25] קרשׁ [26] קר

Semitic QeReN,[27] the Indo-Germanic *keras*,[28] *cornus*, horn and crystal. To this root QR was added a Sh in coining the word QeReSh,[29] and that for *arithmetical and geometrical reasons*.

There is no denying that the Hebrews must have used the letters of their alphabet for numerical purposes, since they had no other numerals in use, and without numerals no civilized life is at all supposable.

From Fig. 4 on page 605 we saw that the formation of the two corners at the west wall of the tabernacle were easily constructed by the Pythagorean theorem of the right-angled triangle, and that this afforded the solution of the construction of all the styles in the walls. When I studied this question thirty years ago the solution occurred to me at that time that Moses, or whoever wrote this account of the tabernacle, learned that theorem in the same place where Pythagoras later learned it, viz., in Egypt. But this does not answer as to the origin of the word QeReSh of which the numerical values of the letters are 1, 2, 3, the last letters but one of the ancient Semitic alphabet.[30]

Leaving out then the last letter Thau, whose number is 400, or 4 in digits, these stared me in the face. I was familiar with cabalistic numerics, mystically called G'Ma-TRIA. I reflected upon the fact that the first three numbers, 1, 2, 3, can not construct the Pythagorean theorem, but the three numbers next to and connected with them, 3, 4, 5, can. Now is there a connection, I asked myself, between the 1, 2, 3, and the 3, 4, 5; that is, a connection between arithmetic and geometry? And what connection have these with that unique word QeReSh?

I shall take the liberty of repeating here the cabalistic operations which gave me the explanation. I know very well that to the reader of the twentieth century these will

[27] קֶרֶן [28] κερας [29] קֶרֶשׁ=ש+קר [30] ש. ר. ק

seem very improbable. But we must bear in mind that the ancient Israelites thought in a way that anticipated the Cabala, and in explaining their writings we ought to think in the way they did even though it may appear abstruse to us. This I did. I drew a right-angled triangle the perpendicular, base and hypotenuse of which represented respectively the numbers 1, 2, 3, and wrote around it that unique word in digits 1(00), 2(00), 3(00). It told me that 1(00)+2(00)=3(00),[31] but should I continue around the triangle now from left to right and add 1(00) to 3(00) it would give me 4(00),[32] yet when I added the omitted letter to the two previously added together, the warning word "False"![33] stared me in the face. I took it to mean that 1+3 equals 4 arithmetically but not geometrically, for line 1 + line 2 gives me more than line 3, as this straight line between the two points of the apex and the base line is shorter than lines 1+2.

Here then was a riddle before me in Hebrew numerals composing a word. I read again my triangle in the reverse direction and beheld the consonants which gave we the word QaShcR,[34] which means "to bind" or "to combine." I took this as a hint to combine not letters into words, but numbers and sides together. I added the Shin to the Koph, the 3 to the 1, and I got the last letter of the Hebrew alphabet, the Thau which equals 400 or 4 in digits, and I put it on the right side of the triangle which first had contained the digit 1. Then I added this digit 1 to the digit 2 of the base line and so I got 3 for this line. I further added the digit 2 to the digit 3 and obtained 3(00)+2(00) =5(00), for which result there is no single numeral letter in the ancient Hebrew alphabet, and I left the number 5 with its numeral letter Hey[35] at the hypotenuse where the 3(00) had stood before. In this way I got a combination

[31] ש=ר+ק [32] ת=ש+ק [33] שָׁקֹר [34] קשר [35] ה=5

of letters[36] which compose no Hebrew word that I knew of, but I had a new triangle with the same right angle at the base and the sides 4 and 3 at the perpendicular and base lines as in Fig. 8.

"Ah," I exclaimed, "here is my Pythagorean theorem, and I have only to square the sides to get my hypotenuse!" And so I got my numbers, 4, 3, 5, evolved from 1, 2, 3, but no verbal meaning to the evolution.[37] I looked and reflected on this puzzle week after week, but it often happens that a solution to a question may come when you are not conscious of reflecting upon it.

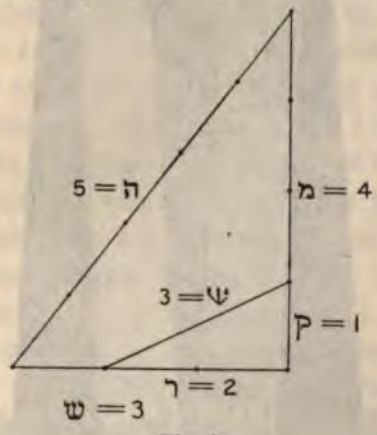
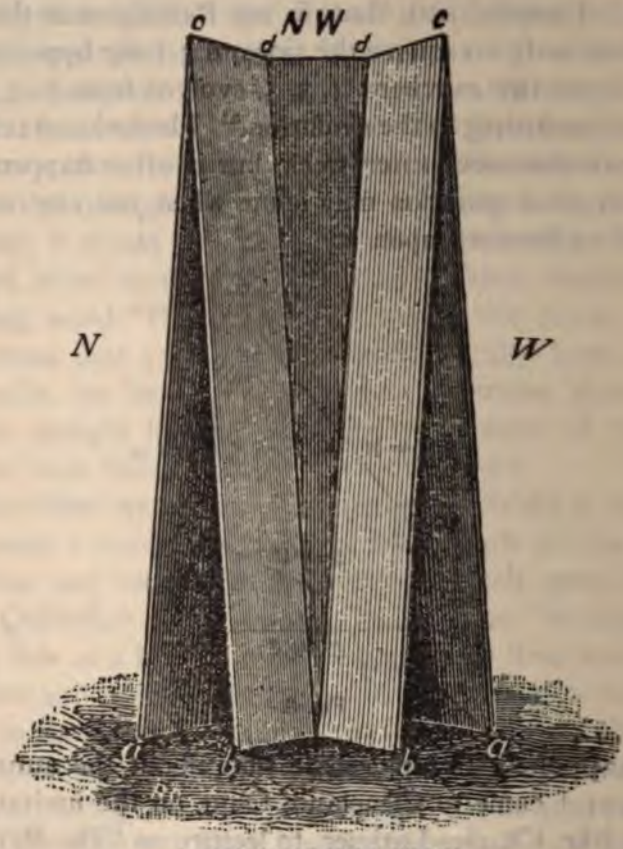


Fig. 8.

It happened, I think, some time about the autumn of 1880 that I came to Cleveland, Ohio, on the invitation of the late Mr. Charles Latimer, to lecture on "The Pyramids in the Bible." Coming to the house of Mr. Latimer after the lecture I felt tired and restless and did not retire until after the members of the household. I went out into the fresh air on that beautiful starlit night. The puzzle about those numeral Hebrew letters came up in my mind, as had then been usual for weeks and weeks. What could be the

[36] ה.ש.ת [37] ה.ש.ת from קָדָשׁ

meaning of those letters Thau, Shin, Hey, or in digits 4(00), 3(00) and 5? I asked mentally. And like a gentle zephyr I heard a whisper, "Mem, Shin, Hey!"[38] (for Mem is 4(0)) and I cried out, "MouSheH!" I stretched my



A PERSPECTIVE VIEW

OF THE N. W. CORNER FROM THE INSIDE OF THE TABERNACLE.

a b, Feet of the terminal north and west styles. *c d*, Ridges of the same. *d d*, Ridge of the corner style.

arms up toward the starry heavens and shouted and laughed, and again I cried. "MouSheH! MouSheH!" for [illegible] is "Moses" in Hebrew. I began to be anxious about

[38] מ. ש. ה

my sanity, or whether I were not the victim of a dreamlike hallucination, and I quieted myself. If I were mad there was method in it, for surely here was the evolution of 4, 3, 5 from 1, 2, 3 in Hebrew letters and words.[39] I looked up at the stars and there was the letter Thau in Orion's belt, and to me it signified 4, *quadra!* Square, of course! I must square the digits of the Mem and the digits of the Shin, and together they would give me the square of Hey. And I went to bed and whispered, "MouSheH! Moses! Pythagoras! *Eureka*!" and lay awake all that night.

Now, dear reader, mistake me not! I have told you a true, simple story of what happened to me more than thirty years ago and I never told it in public before. But do not take me as proposing or claiming any mathematical talent or providential favor by which I discovered how Moses taught the theorem of the square of the hypotenuse. I am neither fool not knave enough for that. I simply sought in a peculiar way and found a possible solution of the origin of that unique Hebrew word QeReSh, which was mistranslated and misunderstood and misapplied for thousands of years by the best scholars of Hebrew, and I am as yet but a humble learner. A curious fact of the relation of the numerals of MouSheH (Moses) to those of QeReSh is that the sum of the latter is just half that of the former, 6 and 12.

Perhaps the linguistic reader will be beguiled in my favor if he turns now to Ezek. xxvii. 6, 7, and substitutes the word "style" for "benches," translating thus: "Of oak-trees from Bashan they made thy oars; the people of Ashoorim from the isles of Khittim made thy style of ivory. Linen with inwoven colors from Egypt was thy spread, to be a banner (not "sail") for thee! Blue and purple from the isles of Elisha were thy tent covering!"

[39] מֹשֶׁה from קֶרֶשׁ

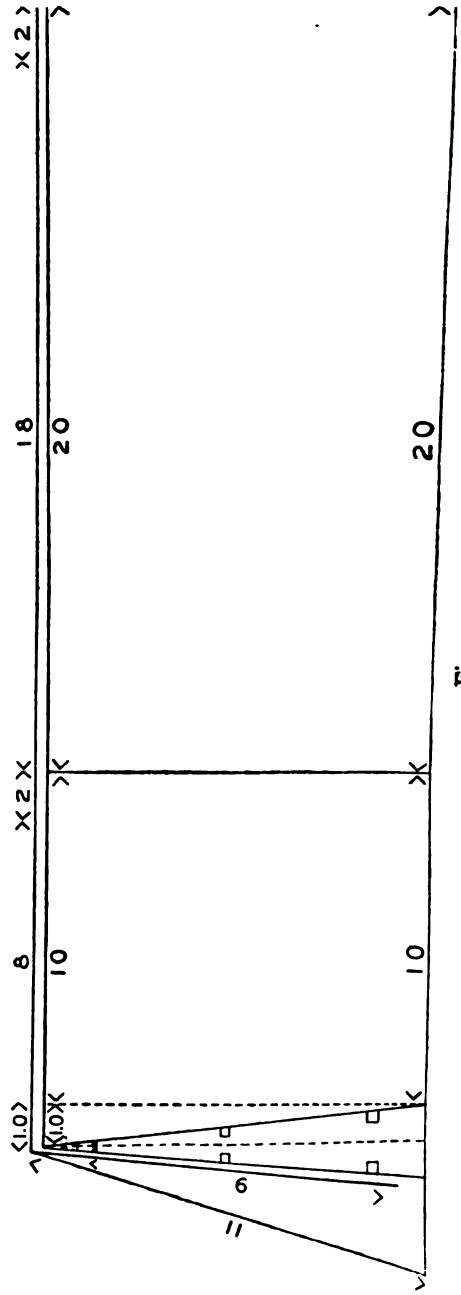


Fig. 9.

Is this not a correct description of a possibly beautiful Tyrian pleasure boat?

(26) "And thou shalt make bolts of shittim planks, five for the styles of the one flank of the dwelling, (27) and five bolts for the styles of the second flank of the dwelling, and five bolts for the styles of the flank of the dwelling at its two hips westward; (28) and the inside bolt inside of the styles, shall be bolting from end to end."

"Of planks," that is, squared. We need not assume with the tradition (see above, page 584), that these bolts were at all on the outside of the styles, for these would spoil the looks of the walls on the inside of the Tabernacle, and be a source of injury to the coverings on the outside by their square housings. They could be excellently disposed on the inside of the styles, two on each declivity, and the fifth would run through housings disposed on alternate opposite planks, and binding the entire long wall of styles to the outer plank of the corner style. And in the same way the bolts would be disposed inside the west wall style planks, two on each declivity, and the fifth bolt binding all these styles as above from one outer plank of a corner style to the opposite one.

(29) "And the styles thou shalt overlay with gold, and their housings thou shalt make of gold; housings they are for the bolts; and the bolts thou shalt overlay with gold."

This vast expenditure of the precious metals on the Tabernacle had very likely a double purpose: (1) to withdraw the people's means of engaging in commerce with neighboring nations and passing caravans, which would necessarily destroy the military discipline and life for which they were to be prepared; and (2) to protect the woodwork against the damage by weather, for the campaign in which Jehovah engaged Israel was from the very start intended to last a whole generation. And lest Israel should, from a natural attachment to and veneration for

a miraculous locality, be tempted to adore that mountain of God, Sinai, Jehovah condescended to wander with Israel in the desert, and have a portable holy dwelling in their midst.

(30) "And thou shalt put up the dwelling according to its adjustment, which thou wert shown in the mount."

There was mathematical judgment necessary for the erection of this dwelling of Jehovah, which we have so long misunderstood. It was certainly not a mere "fashion," as our Common Version has it, that Jehovah is claimed to have shown Moses in the mount.

We can now return to consider the disposition of the two coverings over the length and breadth of the dwelling, which was left unconsidered on page 599. Figs. 9 and 10 will show it.

It will be seen in Fig. 9 that the lower cover goes from the front 20 cubits to its joint of gold hooks, underneath which came the partition curtain of the Holy of Holies. See verse 12, p. 598. Thence it went 10 cubits to a line drawn perpendicularly from the floor. But since the back wall receded from that line to half the base of a style, viz., 1.0606+ cubits, the ceiling cover was by so much longer, and nine cubits was left to cover the outside planks of the west wall. The upper cover, which was doubled in front to the extent of 2 cubits, covered with its 22 cubits to 2 cubits beyond the lower cover. Thence it went 8 cubits to the perpendicular line from the floor; thence it covered 1 cubit of the recess of the wall, and the then remaining 11 cubits trailed to a point 3.64316 cubits back from the lower end of the style planks. This therefore fully explains verse 12. Across the Tabernacle the two covers were disposed as seen in our Fig. 10.

On either side of the ceiling of the Tabernacle there was an excess of 1.06066+ cubits over the 9 cubits width

on its floor, and would therefore require $9 + 2.12132 = 11.12132+$ cubits of cover for the ceiling, leaving a small fraction less than 1½ cubits to cover the sloping outsides south and north with the lower cover, and 1½ with the upper cover, for the same sides, and this is what is meant in verse 13. Neither of these covers reached down to the ground, being evidently left for stretching and shrinking in dry and wet weather of the season. The lower one with the cherubimic design in the admirably selected colors of white, blue, purple and carmine, was evi-

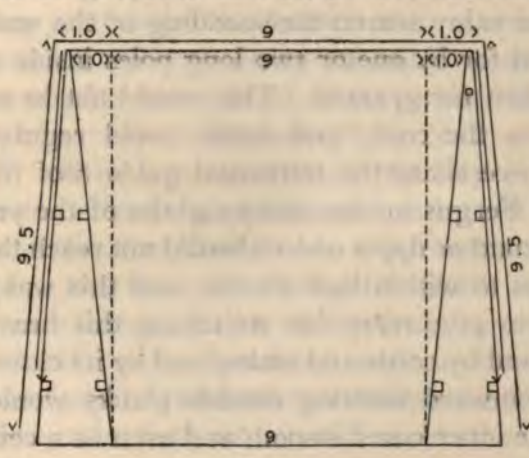


Fig. 10.

dently intended to represent the sky, which came down as it were in front of the Holy of Holies, by the special partition curtain of the same materials, colors and designs (see verses 31, 33), and after overshadowing the outer Holy sanctuary of the priesthood, joined itself by golden crooks to it, and overshadowed with another piece of equal dimensions the inner sanctuary of the Holy of Holies, viz., its ceiling and outside wall. It did not reach the ground, however, for in that dispensation heaven had not yet reached the earth. The question has been asked, why these superfluous 17 cubits for the walls, if it was

only intended for the ceiling? The answer is twofold. (1) The proportions of 20:28 = 5:7, or 40:28 = 10:7, must have a mystical significance. (2) It was necessary to balance the 11 cubits of the ceiling by the 8.5 cubits on either side, and thus prevent the drooping in the middle as far as possible. For a further prevention of this drooping, cords and stakes were used (see Ex. xxxviii. 20), and these cords could not be long, and must be within easy reach. And I think that the outward slanting of the inner planks also prevented that drooping in the middle. That in the rainy season the shedding of the water would be provided for by one or two long poles inside the Holy, may be taken for granted. This would not be necessary, however, as the cords and stakes could regulate it. It does not necessitate the untextual gable roof of Messrs. Paine and Fergusson for seven-eighths of the year.

The second or upper cover also did not reach the ground or the sides to within half a cubit, and this was certainly necessary to give room for stretching this heavy canvas to the ground by cords and stakes and by its close pressure on the downward slanting outside planks would help in keeping the inner cover smooth and even as a ceiling. We see here, therefore, the necessity that the housings of the planks for keeping them together in the walls should have been inside the styles. See comment to verse 26, page 617.

How the covers formed themselves exactly on the ground outside as they were stretched over the ridges of the corner styles, I have no idea, not being a tent maker. But it seems to me that the angular pieces, 9×8.5 cubits of the inner, and 11×9.5 cubits of the upper cover, which would result if the south and north walls met the west wall at right angles from top to floor, would be well disposed on their stretching over the diagonal 1.5 cubits ridge of the corner style, and give some plausible form on the ground.

The doubling of the front piece of cloth of the upper cover upon itself certainly served as an excellent seam there, and prevented the unevenness of the line which would necessarily follow if that line was formed by the mere selvedge; or if this were stretched there by cords and stakes then it would necessarily weaken it. But there was also a proportional intention in that doubling, for 44:30 = 22:15, while 42:30 = 7:5.

The intention of the excess of the upper cover by two cubits over the lower cover, was certainly for the purpose of breaking joints with the lower cover, especially at the golden crooks, and the resulting one cubit excess in length had necessarily to be disposed of by putting its terminus at some distance from the foot of the back outside style planks. It will be seen now that at the very outset of the specifications, when they spoke as yet of the soft coverings, that the specifier had then in his mind the inclined form of the styles, and the 1.06066+ cubit which would result from it in the excess of the ceiling length over the floor length. Traditionists, theorizers, and our Common Version did not see it, and therefore translated in verse 12, "the half curtain that remaineth," i. e., the whole two cubits, "shall hang over the back side of the Tabernacle," instead of, "the half *of the* cloth that remaineth," i. e., half of the two cubits, viz., one cubit, "shall, etc." (See page 572).

The inclined form of the styles gives us also a true idea of the partition curtain between the Holy place and the Holy of Holies, as it is ordained in verses 31-33. Its sacro-technical name is $P^{o}R^{ou}Kh^{a}Th$[40] and both as a derived noun and in its verbal root, is a transposition of the sacro-technical word $K^{a}P^{ou}R^{a}Th$,[41] which in pious haste the Septuagint and our Common Version render "Mercy-

[40] פָּרֹכֶת [41] כִּפֻּרֶת

seat." KºPºuR[42] means "to cover horizontally," and by transposition of letters PºRºuKh[43] means "to cover perpendicularly," but in either case to cover close upon the object covered. Hence the different name of the curtain at the entrance of the Tabernacle, which is called MºSºKh[44] and means only "a loose curtain," derived from SºKºuH,[45] equal to "overshadow." (See verse 14, p. 598). The curtain before the Holy of Holies was a permanent *immovable* partition. But if the walls of the Tabernacle were perpendicular there could be no entrance to it. And yet the specifications of this curtain say nothing of its being in parts. Looking, however, at Fig. 10, we see at once that there was a triangular space (half of a style in its shorter diameter) left open on either side of the immovable partition curtain. The entrance to the Holy of Holies was passable, but with difficulty.

The spaces of 1.06+ cubits in the ceiling (Figs. 9 and 10) must have been the vague truth which the Babylonian traditionists heard, and they manufactured from it the absurd idea that a QeReSh (style) was one cubit thick at both its ends (see p. 583), and tried in this way to account for the differences in the length and width of the covers. Those too who maintained that a QeReSh tapered off to one finger's thickness also held that at its base it was one cubit thick. But neither of them understood that a QeReSh was made of two planks. This gross neglect of the proper study of the text can not, however, be charged either against the Jerusalem traditionalists who evidently knew that a QeReSh was composed of two planks, or against the Septuagint translators who rendered the text as best they could and which is fully capable of being understood according to my re-discovery even in their translation. There is, however, a suspicious neglect of the word "length"

[42] קפר [43] קרח [44] מסח [45] סכה

in verse 16, as though they meant the perpendicular to be 10 cubits. It will always appear strange to me that scholarly commentators should have neglected to such an extent the study of these more ancient traditions. The great Dr. Bähr knew nothing of the Jerusalem traditions, and blindly and complacently followed the French Rabbi Solomon. who must have known them, but preferred the absurdities of the Babylonians. It shows again that tradition is a good servant but a blind master, if taken as ultimate authority.

In taking leave of the reader I beg him to remember that I have not sought in this study to apologize for any faults or obscurities in the specifications of the Tabernacle. I found none in the original Hebrew. And while I have made a very important discovery, I have proposed no theory. Jehovah's words are true, though even good men misinterpret them.

Γινέσθω δὲ ὁ θεὸς ἀληθής, πᾶς δὲ ἄνθρωπος ψεύστης, καθὼς γέγραπται. κ. τ. λ.
Rom. iii. 4.

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CRITICISMS AND DISCUSSIONS.

TITCHENER'S SYSTEM OF PSYCHOLOGY.

When Professor Titchener finished his text-book of psychology, a clean, straight path had been made through the forest of facts, a path so straight that the end of the road can be seen from the first step. If Titchener were not a leader of experimentalists, a scientist with a constitutional bias against conceptualism and arm-chair psychology, the fact of his having a system would be most misleading. His insistence upon theory following rather than preceding facts is too well known to necessitate a defense of his right to have a system. The straight path was not laid down with ruler and compass upon a map in his study, nor was it directed toward a definite goal in the beginning, as his books bear witness. There were many blind leads which had to be retraced. There are many places still to be smoothed, and Titchener himself is the first to admit that future data may necessitate a shift of the line to the right or the left, but—and here is a vital point—if there is a shift it will be consistent with all that has gone before, just as each step of the present path is consistent with every other step.

The above is the imagery, which for the writer is the conscious representation of the meaning of Titchener's work. It is the purpose of this paper to lay bare the skeleton of the system and to show how firmly the parts are joined to make a whole.

The fundamental question, that of the relation of mind to body, is decided by Titchener in favor of psycho-physical parallelism,[1] a parallelism which considers mind and body as two aspects of the same thing. From the point of view of the physical, which is here the nervous processes, there is a continuity which does not exist on the mental side, nor does Titchener posit a sub-conscious

[1] The word parallelism is not an altogether fortunate one to use for this view, suggesting as it does two distinct processes running side by side and separated in space.

to complete the parallelism. A given nervous process, if accompanied at all, is accompanied invariably by the same mental process. A nervous process which is effective for consciousness may, however, occur without a mental process. The mental process, on the other hand, cannot occur unaccompanied by a nervous process. When there is a gap in the mental processes, the mental process just beyond the gap must necessarily, just as the accompanying nervous process, show the effect of the nervous process just completed. While in the realm of the physical the causal law rules, lack of continuity prevents its application on the mental side. The invariable parallelism, that of a given mental process always being accompanied by the same physiological process, rescues psychology for the sciences, only the explanations must ultimately be in physiological terms.

An analysis of the stream of consciousness reveals two elementary processes, sensation and imagery being the sub-classes under the one process, and affection the other process. Titchener often speaks of three processes, counting sensation and imagery as two processes, but he himself treats them as sub-classes of a common element and says that they differ only in degree and not in attributes, so that the twofold division is the logical one.

The *propria* of sensation are quality, intensity, clearness and duration. Extension is only an *accidens,* being absent in the sensation of smell and possibly also in hearing. As was just mentioned, the images possess the same attributes. The affections have all of the propria of sensations with the exception of that of clearness. Affections can neither be clear nor vague. They lack all degrees of clearness just as some sensations lack the spacial attribute.

Titchener's hypothesis, which gives a physiological correlate to this lack of clearness, states that the free afferent nerve endings may be the peripheral organs of affection. This brings affection very close to sensation. Titchener, in fact, says in regard to the three elements of consciousness, "that all three may, with some show of probability, be viewed as processes of the same ultimate type." The other distinction between affection and sensation lies in the relation of their qualities. Pleasantness and unpleasantness, the qualities of affection, are antagonistic, not opposites like black and white, but incompatible, so that the presence of the one in consciousness excludes the other.

It is only in the case of sensation falling upon a virgin soil,

thus escaping the influence of all past experience, that we can speak of sensation without perception. Sensation is for Titchener a concept arrived at by the analysis of perception, and he warns against a genetic interpretation of this concept. For practical purposes we may, therefore, say that sensations always enter consciousness grouped, that is as perception, the form of the group depending upon the laws of attention. They may also be and they almost always are accompanied by images. Without images the group is a pure perception, with images a mixed perception. The second and fundamental difference between sensation and perception is that perception always has meaning. In psychological terms, that is in terms of conscious representation, meaning which is context "is simply the mental process which accrues to the given process through the situation in which the organism finds itself." That is the essence of Titchener's concept of meaning. These words have already aroused in the minds of psychologists very different meanings, but perhaps further quotation and explanation will make clear the meaning which Titchener attaches to them. "Originally, the situation is physical, external; and, originally, meaning is kinaesthesis; the organism faces the situation by some bodily attitude, and the characteristic sensations which the attitude arouses give meaning to the process which stands at the conscious focus, are *psychologically*[2] the meaning of that process. For ourselves, the situation may be either external or internal, either physical or mental, either a group of adequate stimuli or a constellation of ideas; image has now supervened upon sensation, and meaning can be carried in imaginal terms." Further, and this seems at times to be overlooked, the meaning need not be represented in consciousness. There may be a short cut such as occurs in the change from voluntary to involuntary action. To take the example of rapid reading, certain words may produce a certain nervous set, an attitude in physiological terms only, which turns the thought in a definite direction without any imagery of the meaning occuring in consciousness. A second point which is overlooked is that, while the imagery which carries the meaning may shift and probably never is the same in any two minds, the function of the corresponding physiological processes remains the same and the thought or action is directed toward the same definite goal. If A and B both go up the same flight of stairs, A may retain a kinaesthetic image of his movements, B a visual image of the stairs or even the image of a

[2] Italics are mine.

bald head he saw just in front of him. Later if A and B see the word *ascent,* the imagery, which is the psychological representation of the meaning, may differ. In the one case it may be a kinaesthetic image, in the other a visual image of a flight of stairs. The cortical set, or we may say by analogy with the physiological processes, the function of the imagery, will be identical if A and B both mean the same thing. It should be clear from this why we cannot build up synthetically the meaning from the imagery; because in so doing the specific physiological processes are omitted. A bald head may mean a bald head, it may mean "but," that all depends upon the cortical set.

A perception, then, is a group of sensations with or without imagery and with meaning. One sensation alone in consciousness could not have meaning, therefore a perception must consist of at least two sensations or a sensation and an image. For Titchener this is a complete description of perception. The results of introspection have never proven to him the existence of a *form* of combination (*Gestaltqualität*) as a "distinct mental element."

An idea differs from a perception only in that it is composed of images. Even the same laws of growth and decay that we find in perceptions, apply also to ideas.

It was stated above that perceptions obey the laws of attention. Now how can attention itself best be defined? To describe it as a function brings us nowhere. It must be interpreted in terms of consciousness. Introspection discovers that the sensations and images in a given state of consciousness show at least two degrees of clearness, a fovea of relative clearness and a proportionately obscure margin. These degrees of clearness are found to be what is meant by degrees of attention. Thus attention may be described in terms of sensory clearness. Although Titchener has never experienced more than two levels of attention, he admits the possibility of many levels.

As long as a given series of perceptions or ideas remains in the fovea of attention and there is an absence of strain and the margin remains negligible we speak of primary (involuntary) attention. When that which is in the margin tends to come into the fovea and there is thus a fluctuation between margin and fovea, we have secondary (voluntary) attention.

Feelings were found to lack the attribute of clearness. That means that they never fall under attention. In a state of consciousness where we have a perception with a certain affective tone, the

attention can only be upon the perception. The affective tone does not even lie in the margin of attention. The attention, therefore, according to Titchener, does not cover the entire conscious state. Further, if we try to examine a feeling, that is attempt to bring it into the fovea of attention, it disappears. This, however, does not prevent the introspection of affections. Titchener's explanation of this introspection is that, although the attention is on the perception, the instruction concerns the affection, i. e., the attitude is to report upon the quality, intensity etc. of the affective tone. This attitude is sufficient to make possible the desired account of the affection.

The description of the different forms of action is most important. Here the lapse from full consciousness to physiological processes, the influence of the two states of attention, the function of the cortical set and the will consciousness are best shown. There is the typical impulsive action with its idea of end and its imagery of the intended movement. The idea of end is the conscious representation of the determining tendency. In the pure association of ideas this conscious representation is absent. A rough physiological description is a setting of the nervous tract for a straight path toward a definite goal. As in meaning the imagery may not be in consciousness, so here the idea of end may be absent. In the language of psychophysical parallelism there is a gap on the mental side. This gap may broaden until there is not even the consciousness of the intended movement. We then have secondary reflex. If there is a state of primary attention one determining tendency has undisputed control. If there is secondary attention, we find a conflict of impulses. We then have selective action. What Titchener calls volitional action is a variation of selective action. Instead of a conflict between two impulses—two motor tendencies—there is one between an impulse and an idea. There is a choice between a motor reaction and a continuation of the existing state.

Selective action, in fact states of secondary attention in general, come under what is generally called the will. Experiments tend to prove that there is a distinct will consciousness, which consists, on the conscious side, of an "acceptance." This may be represented by organic sensations or imagery which for the most part remain in the margin of attention. This consciousness of acceptance must not be confused with a "will element" which is denied by Titchener.

Analytically we may find unconscious reflex action developing

into conscious action. In regard to the genetic view-point Titchener believes that consciousness was present with the first action.

Emotions cannot be identified with organic reactions. Analysis shows an emotional consciousness to be a through and through affective consciousness. An emotion may occur under the conditions of primary attention or under those of secondary attention. This secondary attention is caused by a critical attitude concerning the cause of emotion, which attitude at times gains the fovea of attention. We then speak of sentiment rather than emotion.

With the description of sentiment the development of the affective side of mental life is complete. With the description of the thought processes the development of sensation and imagery is brought to a close.

That there are only three elementary processes is among the opening statements of the Text-book. In the genesis of the system it is naturally the last fact to be established. Thus far the assertion has stood. Perceptions contain nothing but sensations and imagery, ideas nothing but images. Introspection fails to find either a special form of combination or an action element. In the thought processes the possibility of the presence of the conscious attitude as an independent element and the idea of relation as a dependent element had still to be investigated. As to the first possibility, in the experiments from which the data were taken to prove this assumption, experiments which were conducted after the manner of the reaction experiments, a description of the objects of the ideas and not a description of the psychological vehicle of these ideas was given. Not only does Titchener think that there was no proof offered of the existence of thought elements, but that there was positive proof that no such elements were there. As to the second possibility, that of relation as a dependent element, the experiments which Titchener carried on in his laboratory were much more extensive than those experiments which seemed to show imageless thought and they proved that the consciousness of relation was always represented in terms of sensory or verbal imagery.

This brief outline of the system reveals the structural method in its most consistent form. Function cannot gain the structural psychologist's attention unless it is revealed in consciousness, i. e., unless we are aware of the act of seeing, hearing, etc., as well as of the seen, heard, etc. Titchener does not believe that we are aware of the function except as it is evinced in the temporal sequence of the act.

The nature of Titchener's sensationalism, it is hoped, is clear. It is a sensationalism very different from that of the old school. The sheet of wax cannot act as a true picture for a living substance with "all manner of complex synergy." Titchener may be constitutionally inclined toward sensationalism. He is, however, still more strongly set toward experimentation and although he believes that there are only three elements, all sensational in nature, yet he would be the first to honor the results of a flawless experiment which proved this wrong.

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THE NEW LOGIC AND THE NEW MATHEMATICS.

IN COMMENT ON MR. PHILIP E. B. JOURDAIN'S ARTICLES.

The new logic is a science of many surprises, for it has led to most astonishing results. Mr. Philip E. B. Jourdain treats this subject in two articles in the present number of *The Monist*, in one very short essay entitled "Some Modern Advances in Logic" and a longer one entitled "The Philosophy of Mr. Bertrand Russell." The latter is written in a humorous way which adds a peculiar zest to the dryness that otherwise prevails in logic. Even the title and subtitle with the corresponding citations in the appendices are a parody on Mr. Russell's *Critical Exposition of the Philosophy of Leibnitz with an Appendix of Leading Passages.* Mr. Bertrand Russell whom Mr. Jourdain selects as a target for his shafts is one of the most prominent representatives of modern logic.

It is here presupposed that the reader is acquainted with the political views of Mr. Bertrand Russell, who is an enemy of the Philistines' idea of personal property. At the same time he is a staunch free trader, a vigorous upholder of woman suffrage, and in his most popular writings, he prefers to speak in paradoxes.

Modern mathematicians have become conscious of the limitations of Euclid and give expression to the hypothetical nature of the traditional method of stating propositions by rendering them conditional through an "if." They do not say: "A is true, therefore B is true," but "If A is true, then B is true." With all due respect for this subtlety, we can not help thinking that this cautious mode of expression is like walking on stilts while one may step squarely on firm ground.

Mr. Bertrand Russell corrects the traditional idea that mathematics deals with space. According to his view mathematics is pure logic. And this notion has become quite common among modern mathematicians. For instance: "In geometry for example we do not, as formerly everybody used to think, study the properties of the space we live in: We only say things of the form—'if space has such and such properties, then it has such and such other properties.'" This method appears very guarded, but it is simply awkward and misleading. It is, as we said before, stilted and not in agreement with the true nature of mathematics. The mathematical feature is ignored and the logical connection of its propositions is considered as the whole and the only thing of value. If in the same way we annul the facts of the several sciences, and limit our attention to their methods we might declare that astronomy is mere mathematics and financeering pure arithmetic.

Our own view is somewhat more direct than the stilted thought of "if" clauses, and we trust it will prove more helpful, more true, and more clear. Instead of saying "if space is so and so," we prefer to construct space and see what the result will be.

We bear in mind that we gain the conditions of our construction by abstraction; which means, we think away all matter and energy, all concrete existence, all particular things, and retain only pure form, which is the relational among things characterized as non-concreteness, non-particularity, and we note that non-particularity implies anyness. We drop from thought our own concrete existence and retain only possibility of motion *in abstracto*. We move in mere extension, which we have described as the scope of motion. Instead of saying "If we move about," we move about in thought and note the result of our doings in this field of anyness. Thus we start from the facts of experience: we create a field for our activity by abstraction and construct in it the several purely formal sciences. The foundation is given by the facts of existence, but we must clear the field by removing what otherwise is the most important part of knowledge, the data furnished by the senses. The method is (in Kantian terminology) *a priori* and the constructions accomplished are purely mental.

It is obvious that mathematical space is not the space we live in, but an abstract idea, constructed from the notion of pure form which has been gained by an analysis of experience.

There is no need of repeating how mathematical space and

then its several tools, the plane, the straight line, and the right angle, are produced as unique limits by halving the scope of motion (mathematical space) and how they become so valuable on account of their uniqueness which makes it possible that they can serve as standards of reference.* No need to insist here that there is no objection to making other constructions of non-Euclidean spaces. The question is not which space is true, or corresponds to our physical space, but which system of construction is most serviceable in practical life.

We find that mathematics rests on a good foundation and would encourage mathematicians to dare trust their science. Feeling the *terra firma* of fact under our feet we confidently discard the stilts of a gingerly "if." We do not say, "If I abstract the notion of pure space and of pure motion, if I halve the scope of pure motion so as to make both halves equal, if I do this or that," but we simply do it and watch the result of our doings. At the same time we see no need in denying that there is an element in geometry, the product of our moving about, which we call mathematical space, and which can not be deduced from pure logic. Mathematics, or rather geometry, is not merely pure logic. It contains an additional factor which is the specifically mathematical feature of mathematics. The logical element in mathematics, and also the relation of the *if*-sentence to its conclusion, are merely the means to an end, while the essential result consists in tracing the several properties of space, viz., the nature of angles, of triangles, of circles, of curves of all degrees and kinds, all of which are constructions in the field of anyness and results of our own doing, and they contain features which would remain unintelligible if we could not trace them in figures within the scope of our thought-motion. These results, and not the indispensable tools of logical method, are after all the main objects of the mathematician's inquiry.

The new logic and the new mathematics herald a new period in the development of scientific thought. They find their counterparts in physics in the denial of absolute motion, and we do not deny that all these efforts tend in the right direction. We gladly recognize the valuable work accomplished by Peano and Bertrand Russell, not to mention others, such as Frege, Georg Cantor and men of former generations; but we believe that the results of their labors can easily be supplied with or supplemented by a sound philo-

* See the writer's *Foundation of Mathematics*, pp. 69-72, and the condensed synopsis of his work *The Philosophy of Form*, p. 9.

sophical foundation, and thereby we can dispense with all ifs as paradoxes and mystifications. P. C.

DR. EPSTEIN ON THE TABERNACLE.

Much has been written and published about the construction of the Tabernacle and the Temple, but modern investigators have naturally acquired a habit of studying all the theories that have been propounded by their predecessors, whereupon they select from these traditional interpretations what they deem most probable. Dr. Epstein, however, forms an exception to this rule. He belongs to an old generation. He is by birth an Israelite and has grown up in the old-fashioned way of Jewish tradition. He reads and speaks Hebrew fluently, and is as familiar with the Biblical text as devout modern Christians frequently are with the King James version. His interpretation is based upon the original Hebrew, and he has compared his views with other explanations only after having formed his own opinion.

The problem of the nature of the Tabernacle is independent of the question whether or not the Tabernacle existed. It may have been a pure invention as is now commonly believed by critics. The problem of the exegetist is above all an expression of the meaning of the text and what the author of these passages meant to describe, and here Dr. Epstein is the best man to give us a correct answer. Even among rabbis the knowledge of Hebrew as a living tongue has become rare, and here we have an unbiased rendering of the text as it impresses itself upon a man who has grown up in the language of holy writ. A test of the value of Dr. Epstein's conception seems to be that the construction of the Tabernacle appears not only feasible but practical. The interpretation of the two planks as resting against each other, renders it possible that the building could have been easily erected and would withstand even a storm in the desert. Further, these planks would not be so heavy as to make their transportation impossible to a tribe of migratory nomads, while it would be a problem to determine how big beams could be transported and be taken up and taken down again as readily as a nomad pitches his tent. This tabernacle of Dr. Epstein could be easily transported on four ox-carts, and its erection would not demand either unusual skill or exertion. At any rate we deem

the presentation of his ideas worth the consideration of Old Testament students.

Dr. Epstein contributed to *The Monist* an article on "The Mosaic Names of God" (July, 1907), wherein he expressed his opinion (p. 393) that the author of the 110th Psalm shows his belief in a Christ when saying, "The Lord said unto my Lord!" This is a straw in the wind explanatory of his conversion to Christianity, and it drew upon him some criticism from his former coreligionists. P.C.

BOOK REVIEWS AND NOTES.

NATURAL PHILOSOPHY. By *Wilhelm Ostwald.* Translated by *Thomas Seltzer.* New York: Henry Holt & Co., 1910. Pp. 193. Price $1.00 net.

Under this title appears an English translation of Ostwald's treatise on nature philosophy as distinct from academic philosophy. The book is well translated and we propose to characterize Ostwald's philosophy by a series of quotations.

Professor Ostwald says:

"The present work is meant to serve as the first aid and guide in the acquisition of these comprehensive notions of the external world and the inner life. It is not meant to develop or uphold a 'system of philosophy.' Through long experience as a teacher the writer has learned that those are the best pupils who soon go their own way. However, it is meant to uphold a certain method, that is, the scientific (or, if you will, the natural scientific), which takes its problems, and endeavors to solve its problems, from experience and for experience."

Professor Ostwald opposes science for the sake of science. He says:

"Mere knowledge of the past which is not meant to, or cannot, serve as a basis for shaping the future is utterly aimless knowledge, and must take its place with other aimless activities called play."

Concerning scientific concepts Ostwald says:

"The laws of nature do not decree what shall happen, but inform us what has happened and what is wont to happen. The knowledge of these laws, therefore, makes it possible for us, as I have emphasized again and again, to foresee the future in a certain degree and, in some measure, also to determine it.... We may expect that if in a given specimen of water we discover a relation which up to that time was unknown, we shall find this relation also in all the other specimens of water even though they were not tested for that particular relation. It is obvious how enormously this facilitates the progress of science. For it is only necessary to determine this new relation in some one case accessible to the investigator to enable us to predict the same relation in all the other cases without subjecting them to a new test. As a matter of fact, this is the general method that science pursues. It is this that makes it possible for science to make regular and generally valid progress through the labors of the most various investigators who work independently of one another, and often know nothing of one another. Of course, it must not be forgotten that such conclusions are always obtained in accordance with the following formula: things have been so until now, therefore we expect that

they will be so in the future. In every such case, therefore, there is the possibility of error. Thus far, whenever an expectation was not realized, it was almost always possible to find an 'explanation' for the error."

Concerning causation Professor Ostwald is rather didactic. He says:

"If by experience we have found a proposition of the content, 'If A is, then B is also,' the two concepts A and B generally consist of several elements which we will designate as a, a', a'', a''', etc., and as b, b', b'', b'''. Now the question arises, whether or not all these elements are essential for the relation in question....The general method of convincing oneself of this is by eliminating one by one the component parts of the concept A, namely, a, a', a'', etc., and then seeing whether B still appears. It is not always easy to carry out this process of elimination....We must multiply the experiences as much as possible in order to determine what constant elements are found in the concept B, and to form from these constant elements the corresponding concept B'. The improved proposition will then read: if A' is, then B' is also. This entire process may be called the purification of the causal relation."

He solves the problem of free will in this way:

"Essentially there is no objection to be found to a fundamental determinism which explains that this feeling of freedom is only a different way of saying that a part of the causal chain lies within our consciousness, and that we feel these processes (in themselves determined) as if we ourselves determined their course."

Apparently he is not a friend of the science of language, for he thus takes philology to task:

"The unwarranted importance attached to the historical study of language forms is paralleled by the equally unwarranted importance ascribed to grammatical and orthographic correctness in the use of language. This perverse pedantry has been carried to such lengths that it is considered almost dishonorable for any one to violate the usual forms of his mother tongue, or even of a foreign language like the French. We forget that neither Shakespeare nor Luther nor Goethe spoke or wrote a 'correct' English or German, and we forget that it cannot be the object of a true cultivation of language to preserve as accurately as possible existing linguistic usage, with its imperfections, amounting at times to absurdities. Its real object lies rather in the appropriate development and improvement of the language."

His love of an international artificial language finds expression on pages 100-101:

"A twofold advantage will have been attained by the introduction of a universal auxiliary language. Recently the efforts in that direction have made considerable progress. In the first place it will provide a general means of communication in all matters of common human interest, especially the sciences. This will mean a saving of energy scarcely to be estimated. In the second place, the superstitious awe of language and our treatment of it will give way to a more appropriate evaluation of its technical aim. And when by the help of the artificial auxiliary language, we shall be able to convince ourselves daily how much simpler and completer such a language can be made than are the 'natural' languages, then the need will irresistibly assert itself to have these languages also participate in its advantages. The consequences of such progress to human intellectual work in general would be

extraordinarily great. For it may be asserted that philosophy, the most general of all the sciences, has hitherto made such extremely limited progress only because it was compelled to make use of the medium of general language."

Professor Ostwald recurs to the subject once more on page 183, where in a footnote he declares himself in favor of Ilo as against Esperanto which, he predicts, "must inevitably die out."

His theory of time and space may be characterized in the following quotation:

"The properties of time are of so simple and obvious a nature that there is no special science of time. What we need to know about it appears as part of physics, especially of mechanics....

"As for space, the presence of the three dimensions conditions a great manifoldness of possible relations, and hence the existence of a very extensive science of bodies in space, of geometry. Geometry is divided into various parts depending upon whether or not the concept of measurement enters. When dealing with purely spacial relations apart from the concept of measurement it is called geometry of position. In order to introduce the element of measurement a certain hypothesis is necessary which is undemonstrable, and therefore appears to be arbitrary and can be justified only because it is the simplest of all possible hypotheses. This hypothesis takes for granted that a rigid body can be moved in all directions in space without changing in measure. Or, to state the inverse of this hypothesis, in space those parts are called equal which a rigid body occupies, no matter how it is moved about.

"We are not conscious of the extreme arbitrariness of this assumption simply because we have become accustomed to it in school. But if we reflect that in daily experience the space occupied by a rigid body, say a stick, seems to the eye to undergo radical changes as it shifts its position in space and that we can maintain that hypothesis only by declaring these changes to be 'apparent,' we recognize the arbitrariness which really resides in that assumption. We could represent all the relations just as well if we were to assume that those changes are real, and that they are successively undone when we restore the stick to its former relation in our eye. But though such a conception is fundamentally practicable in so far as it deals merely with the space picture of the stick, we nevertheless find that it would lead to such extreme complications with regard to other relations (for example, the fact that the weight of the stick is not affected by the change of the optic picture) that we do better if we adhere to the usual assumption that the optical changes are merely apparent."

Professor Ostwald opposes the mediumistic explanation of nature. He says:

"All natural phenomena can ultimately be conceived as the motion of matter. Through the greater part of the nineteenth century this conception, called scientific materialism, was accepted almost without opposition. At present it is being more and more recognized that it was only an unproved assumption, which the development of science daily proves to be more untenable."

We search in vain for a definition of the soul. But our author speaks of organisms as "extremely specialized individual instances of physico-chem-

ical mechanics," and what takes the place of the soul appears to be in his philosophy, "adaptation or memory." He says:

"It is the property which we have called memory, and which we will define in a very general way as the quality by virtue of which the repetition in organisms of a process which has taken place a number of times is preferred to new processes, because it originates more easily and proceeds more smoothly. It is readily apparent that by this property the organisms are enabled to travel on the sea of physical possibilities as if equipped with a keel, by which the voyage is made stable and the keeping of the course assured."

Professor Ostwald raises the question, Is there a standard in the scale of organisms? and answers it thus:

"Since our opinion as to what constitutes a higher and a lower organism is doubtless arbitrary, let us ask whether it is not possible to find an objective standard by which to measure the relative perfection of the different organisms."

Concerning civilization he says:

"Everything which serves the social progress of mankind is appropriately called civilization or culture, and the objective characteristic of progress consists in improved methods for seizing and utilizing the raw energies of nature for human purposes. Thus it was a cultural act when a primitive man discovered that he could extend the radius of his muscle energy by taking a pole in his hand....And at the other end of the scale of civilization the most abstract scientific discovery, by reason of its generalization and simplification, signifies a corresponding economy of energy for all the coming generations that may have anything to do with the matter. Thus, in fact, the concept of progress as here defined embraces the entire sweep of human endeavor for perfection, or the entire field of culture, and at the same time it shows the great scientific value of the concept of energy."

According to Professor Ostwald, man is not yet civilized, for he continues:

"If we examine our present social order from this point of view, we realize with horror how barbarous it still is. Not only do murder and war destroy cultural values without substituting others in their place, not only do the countless conflicts which take place between the different nations and political organizations act anticulturally, but so do also the conflicts between the various social classes of one nation, for they destroy quantities of free energy which are thus withdrawn from the total of real cultural values. ....We are living at a time when men are gradually approximating one another very closely in their natures, and when the social organization therefore demands and strives for as thorough an equalization as possible in the conditions of existence of all men." K

ELÉMENTS DE CALCUL VECTORIEL. Par *C. Burali-Forti* et *R. Marcolongo*. Translated from the Italian by *S. Lattès*. Paris: A. Hermann, 1910. Pp. 230. Price 8 fr.

The vectorial calculus is here studied in relation to its many applications to geometry, mechanics and mathematical physics. Part one treats of real numbers, points, vectors, and Grassmann's forms of primary space. The second part presents applications of this vectorial system which the authors

call the "minimum system," and illustrations are chosen to show the great superiority of the absolute vectorial calculus over the old indirect methods of coordinates. P

DAS ERKENNTNISPROBLEM IN DER PHILOSOPHIE UND WISSENSCHAFT DER NEUEREN ZEIT. Von *Ernst Cassirer*. Berlin: Bruno Cassirer, 1911. Pp. 601.

The first volume of this scholarly work of Dr. Ernst Cassirer, of the University of Berlin, has now appeared in a second edition. The author has enlarged upon and to some extent modified his views since they were presented in the first edition. The problems of thought appear to him no longer as rigid ready formations which are going to stand forever, but as instruments of thought. The absolute has disappeared, and the creations of thought appear in their historical relativity as conditioned by their time and their surroundings. The present volume has been revised and supplemented in many places, and in the second volume certain sections have been thoroughly rewritten and show considerable change of view, for instance the chapter on Gassendi.

The work begins with the age of the Renaissance, starting with Nikolaus Cusanus. It discusses in the second part the discovery of the concept of nature, and in the third part the foundation of idealism. The second volume may soon be expected. K

RAZIONALISMO E MISTICISMO. Da *Michele Losacco*. Milan: Libreria Editrice Milanese, 1911. Pp. 259. Price 3.50 lire.

This is a collection of essays and sketches most of which have appeared in various Italian philosophical and literary periodicals. They show considerable familiarity with general European thought. Following an introductory essay on "Rationalism and Mysticism" the author gives first his opinion on the Origin of Natural Philosophy," then discusses in turn the revival of mysticism, the theory of objects and rationalism, rationalism and "intuitionism" including a critique of Bergson and Schmitt as representatives of the latter school. The last of the essays is a hitherto unpublished treatment of Jakob Böhme in the light of the latest criticism and his own *Aurora*.

The sketches are more diversified in object matter though most of them are more or less in the general character of reviews, and many of them are of purely local interest. Their titles are fairly indicative of their scope: "A New Book on Hegel" discusses a work now nearly four years old by the Italian B. Croce; "The Thinker Leopardi" is called forth by an Italian work of Gatti on this philosophical writer; "The Anti-Metaphysical Prejudice" is a brief history of the opposition to metaphysicism; "Facts and Laws in Human Affairs" treats of the uniformities noticeable among the diverse isolated facts of history; "Nietzsche and Tragedy" discusses the light thrown on Nietzsche's personality by his "Origin of Tragedy" recently translated into Italian; "A Successor of Pascal" is the French Priest Laberthonnière; then follow "The Magician of the North" (J. G. Hamann); "Franciscan Studies," a review of a book by F. Tocco; "The Circulation of Italian Thought"; "B. Croce and his Philosophy of Practice"; "Delacroix and his Studies in Mysticism"; *"Le Philosophe Inconnu"; "The Greatest Problems* of Varisco" and "Masci's Conception of Religion." P

GÉOLOGIE NOUVELLE. Théorie chimique de la formation de la terre et des roches terrestres. Par *Henri Lenicque*. Paris: Hermann, 1910. Pp. 263. Price 7 francs.

Henry Lenicque has published a new work on the new geology, which is a chemical theory of the formation of the earth and its rocks. The book is well illustrated and elucidates the ideas of the author by appropriate diagrams. By "new geology," M. Lenique understands a conception of the formation of the earth which is neither the theory of the Neptunists nor of the Plutonists, but one which would explain the rock formation from the laws of chemistry . The author follows in the main the authority of M. Adhémer, a Frenchman who is perhaps not much known outside of France.

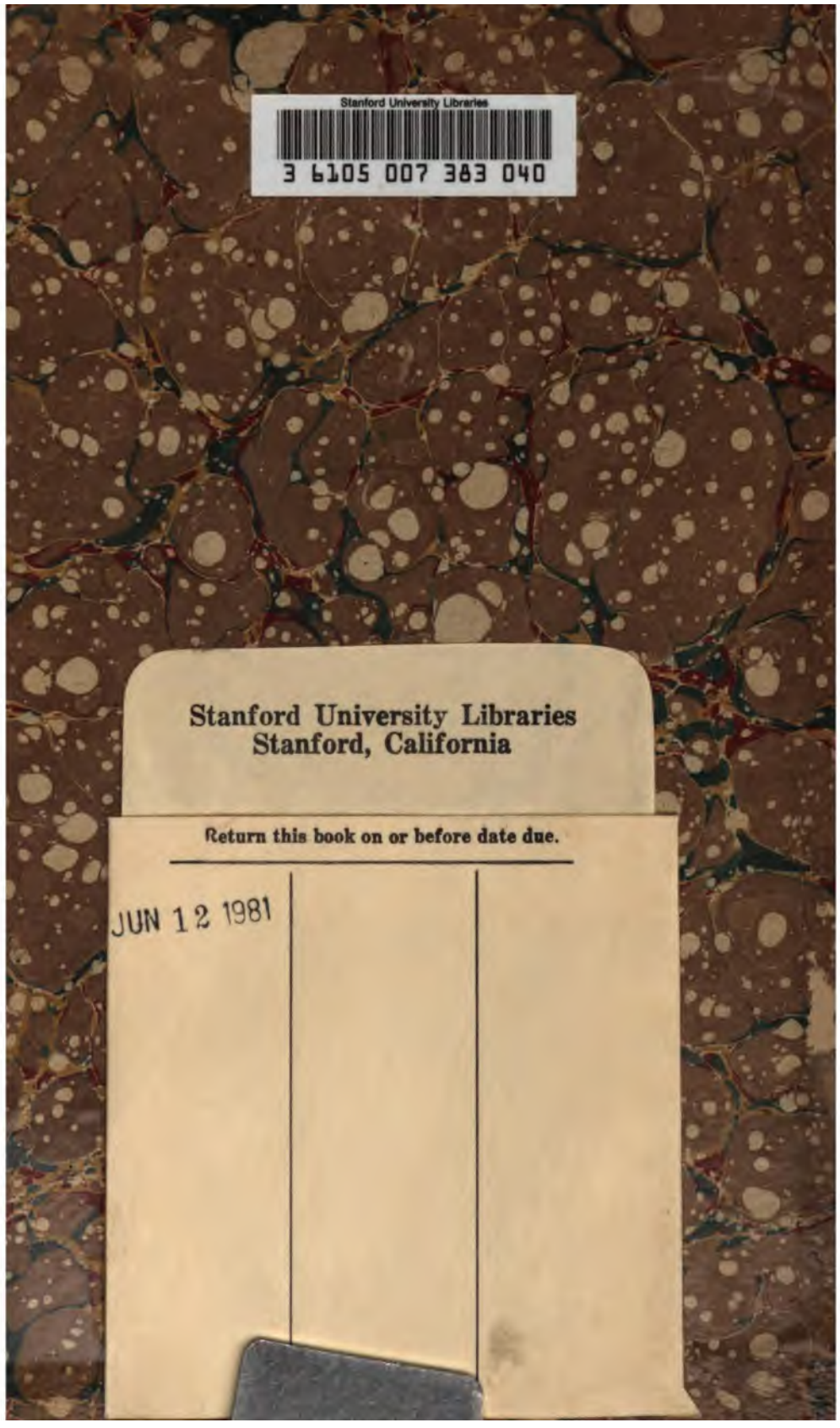
The book is prefaced by a critical letter of M. Philippe Bunau-Varilla, a prominent French engineer.

LA MORPHOLOGIE DYNAMIQUE. Par *Frédéric Houssay*. Paris: Hermann, 1910. Pp. 29. Price 1.50 fr.

Prof. Frederic Houssay of the Sorbonne in Paris has published this little pamphlet as the first number of a "Collection on Dynamic Morphology," and it is noticeable with what clearness he insists on the difference of substance and form in all the sciences, a difference which we ourselves have always insisted on. He starts with a quotation from Prof. A. Dastre who says: "In many things, we must distinguish form and contents, figure and substance." In the second chapter he discusses the artificial opposition between morphology and physiology; in the third, their fundamental identities. The fourth chapter is devoted to the energetic and static aspects of these sciences. Then he discusses the cinematic and dynamic function of physiology, and finally the possibilities in a further development of dynamic morphology. K

LIFE AS REALITY. A Philosophical Essay by *Arthur Stone Dewing*. London: Longmans, 1910. Pp. 214. Price $1.25 net.

Mr. Dewing has studied philosophy under Professor Royce to whom he dedicates this volume. He advocates a system of idealism which would give full value to the strivings of the personal will "without degenerating into crude individualism." He believes that reality is "revealed directly through the impulses, the strivings, the purposes of our life and only indirectly through the vast world of objects....It is in the effort and not at the goal that we must search for the real." The author outlines the method of his work in the preface. He has followed the method of trial and error in this search. After stating the problem of the final reality in the opening chapter, he inquires what the material world and science have to offer by way of solution. Later the problem shifts to the realm of the moral law, to society, to religious experience, and to the various conceptions of philosophic truth, culminating in the eighth chapter which bears the title of the whole. He acknowledges his debt to "The whole idealistic trend of our modern world" and especially "to the imperial genius of Kant." P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